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VETERINARY MEDICINE

4753 GRAND BOULEVARD, CHICAGO

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The Veterinarian and the Antivivisectionist
Nostrums from Abroad
Freight and Passenger Trucks on Public Highways
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Things Worth Knowing About Bees
Denies Trained-Animal Act is Brutal
Puts Blame on the Cow
Veterinary Corp News
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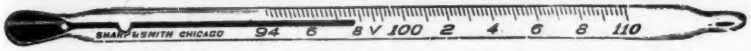

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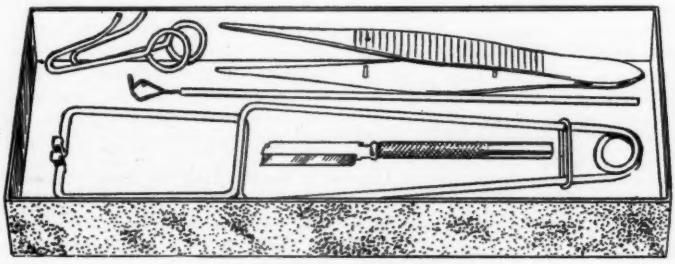

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Veterinary Medicine

Vol. XVII DECEMBER, 1922 No. 12

Editorial

THE VETERINARIAN AND THE ANTIVIVISECTIONIST

When the veterinary profession arrays itself unalterably against movements intended to cultivate kindness and consideration in the handling of animals it is taking the wrong position and when it discounts the need of curbing brutality it is displaying a very poor quality of sportsmanship towards the creatures that maintain it.

It does not matter whether the creature at hand is an elephant, a tiger, a monkey, a dog, a horse, a rabbit or a guinea pig, it deserves fair play in our hands and we individually and collectively should see that it is accorded fair play in the hands of others.

That there has been some unnecessary pain and misery inflicted on experimental animals will hardly be denied and that some experimenters and some research workers in the past have been prone to forget about the pain their work requires them to inflict is also undeniable.

The laboratory worker, whether he is employed in a large laboratory or labors in his own private work-shop, who handles living animals with no greater show of sentiment than the undertaker handles a corpse, invites opposition to the kind of work he is doing no matter how necessary it may be; and the one who terrifies animals for no other reason than that of re-demonstrating established facts for the gaze of the curious, is now regarded as a passing non-essential person.

BUT, it is unfortunate for dumb brutes that antivivisectionist movements until now have been advocated only by a group of radical fadists who show no inclination to separate themselves from the silly antivaccinationists, the anti-meat-eaters, and the agitators against modern medical science, to the end that they excite a stubborn opposition to their main purpose from fair-minded men, who, unlike themselves, are willing to accept proved scientific facts at their par value.

The veterinary profession is opposed to indiscriminate, unnecessary and cruel vivisection. It stands for fair play for animals whether they are doing their bit as beasts of burden, beasts of sports, beasts for exhibition or as experimental animals in the laboratory, but it also wants justice to the cause of necessary experimental pathology. In other words, it is willing to act as referee but will never array itself as a radical exponent of either side of the vivisection controversy.

When the antivivisectionists have segregated their activities from those of the radical anti-medical fadists they will have made a long step forward and will then be in a position to invoke the universal support of the veterinarian. In short, the veterinarian is in sympathy with the humane idea but not with the anti-medical propaganda. The one has a noble motive, while the other is a meaningless agnostic tirade. The one will get nowhere with such a mill-stone hanging to its neck.

NOSTRUMS FROM ABROAD

When the next congress convenes American manufacturers of chemicals will have to renew their efforts to protect the market from being flooded with a motley array of foreign medicinal agents that are ready for shipment to these shores, as the work to make us independent in the matter of synthetic drugs and dyes since we declared war against Germany has been sacrificed by congress failing to heed the pleas of our manufacturing chemists for fair play. It seems that we are at the threshhold of a period when we may expect to be flooded with all kinds of synthetic agents, ambiguously captioned, described under formulas that are never understood by and mean less to the therapist, and exploited with catchy advertisement which, in our blind confidence in foreign made drugs, make us easy victims of products that are often little more than worthless.

American veterinarians have always shown a great confidence in the remedial agents, coming from our European confreres, that are used and recommended by them, but it can not be denied that this confidence has been abused

by European manufacturers and jobbers taking advantage of the high opinion we have shown towards their scientists to send us a mess of drugs we should long since have thrown into the discard. That we have been duped for years is more than a mere suspicion; it is said on good authority that when a coal tar derivative is worthless as a dye it can always be called a medicine and sold to Americans. Don't bite on these baits, but pin your faith in the home product, and help our chemists in their campaign for justice.

FREIGHT AND PASSENGER TRUCKS ON THE PUBLIC HIGHWAYS

Attention has frequently been called to the unfairness of constructing and maintaining public highways at enormous cost and then turning them over to the mercies of carriers of freight and passengers for private gain without compensation to the people. Such conveyances, whether operating as common carriers or purely for individual gain, compete against carriers who construct and maintain rights-of-way at their own expense and in addition pay taxes for the ground and material used.

Owners of abutting property in towns and cities are paying exorbitant sums for street pavements only to see them wrecked in a short time by heavily laden trucks thundering over them at too high speed; farmers are paying for bonds, and interest thereon, for the construction of roads that are riddled with impassable chuck-holes before the bonds are due; and the states and the nation are working out programs of road construction running into the billions to be collected by direct and indirect taxation without any apparent plan of making the largest beneficiaries pay their just share.

Even with this enormous subsidy studiously withheld from publicity, the exponents of the automotive industry have had a hard time to juggle statistics in a way to make a satisfactory showing against horse transportation.

The Horse Association of America is bringing this unjust subsidy to the attention of the legislatures of many states, and the public utilities commissions of some states are analyzing the situation with a view of curbing a trend that is so manifestly unfair to the many and a blessing to only a few. The changing situation is graphically illustrated in a decision just handed down by the public utilities commission of Colorado in the case of a man who was refused a franchise to operate a passenger line between two cities on grounds best stated in the commission's own words:

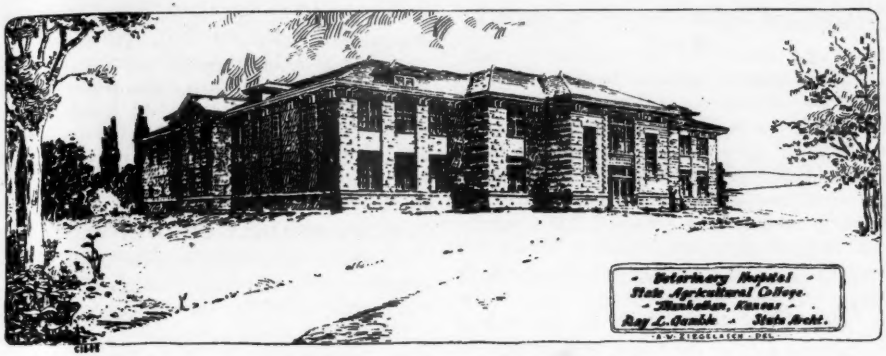
"Public conveniences and necessity by which must be understood the convenience and necessity of the people at large, as contradistinguished from the convenience and necessity of a very small number of persons who seek to derive a profit from the farmers' and city home owners' investments in roads, never contemplated that the truck driver should destroy them, after contributing little or nothing toward the cost of construction.

"When the taxing laws of this state (Colorado) are so amended that the truck driver operating over state highways shall contribute his due proportion to the cost of construction and maintenance of our highway, then, and not until then, can this commission regard his use, under proper conditions and restrictions, as of equal benefit to the people with the moderate use thereof by the ordinary taxpayer."

The whole truth about automobiles and all forms of vehicles propelled by internal combustion engines is that they have never paid, but on the contrary continued year after year to exact a toll for existence that was until now unheeded by the public. The popularity of the automobile, and the desire of everyone to own one, entirely overshadowed the matter of cost to the individual and the probable effect the development of such an industry would have on the country in general. According to the opinions of the best students of economics the industry has lured millions that should have gone into other channels, other development projects, and now to lure still more wealth it proposes to use billions of public funds to build roads. Road building, like the automobile itself, is popular with the people and will continue, but the industry that has already taken nearly all of the people's surplus wealth should now be made to pay its just share of the cost.

The millions already spent on roads and the billions in prospect must come out of the soil, and while it is hoped the soil will yield enough wealth to pay the bills, these must henceforth be prorated justly among the beneficiaries.

"Practitioners of veterinary medicine, if you do not interest students in taking a veterinary course, there will soon be a shortage with the result that laymen will want short courses so that they may do their own veterinary work. For the good of the live stock industry, such a situation should not arise."—(K. S. A. C. Veterinary Alumni News).



KANSAS ENLARGES ITS FACILITIES FOR VETERINARY TRAINING

There is approximately $10,000,000,000 of the total national assets invested in live stock. The annual loss from death is about $250,000,000. If the loss from sickness were added to these appalling figures, there should be no other argument needed as to the wisdom of encouraging the advancement of veterinary science. But veterinary science will not advance much unless veterinary practice remains attractive to men of quality, and in turn men of quality will not enter a profession that is a subsidiary of other agencies.

The big job that now seems sharply cut out for the veterinary profession is to bring the public into a comprehensive understanding of its significance and to emphasize to those who should know better, that it is not an enterprise to shunt about with impunity.

Through the courtesy of Dean Dykstra we are able to display in no uncertain manner the confidence this progressive state is showing in the future of veterinary science, by reproducing herewith the architects' plans of a new veterinary hospital under construction at the cost of over $100,000. The new building is located about 50 feet northwest of the present veterinary building. It will have a frontage of 175 feet and a depth of 146 feet, and will be provided with all needed laboratories and accommodations for the different species of animals, together with the necessary class rooms required for clinical lectures and demonstrations.

This enterprise is important. It not only fills a need for better facilities to educate veterinarians but is a timely inspiration for other states where veterinary science is not receiving the kind of public support that will assure the future protection of the vast wealth invested in live stock. Kansas again is showing the foresight that has so frequently distinguished it from other states since it became a sovereign commonwealth.

This physical expansion does not, however, tell the whole story. The curriculum has been broadened to include farm poultry production, diseases of poultry and diseases of small animals, and the young blood of its faculty is exerting a powerful influence in the matter of making veterinary practice popular, in bringing the advantages of a veterinary education to the attention of prospective students and in showing the need of a larger enrollment to forestall a backward trend.

The enrollment of the present session is sixty-nine, of which 21 are seniors, 18 juniors, 13 sophomores, 9 freshmen, 3 specials and 5 six-year students.

MODERN ETIOLOGY NOT ALL BACTERIOLOGY

Everyone now admits that there are agencies other than bacteria to consider in the study of etiology. Today there is a greater inclination than previously to study not only the bacteria but also the fertility of the field into which they become implanted. Systemic or organic enfeeblement from poor nourishment, improper balance of ration, over-work, exposure to extreme tempeatures, bad hygienic surroundings, or any other agency that tends to lower the resistance of all or any part of the body, are so many conditions receiving especial attention in the study of modern medicine. In other words, the etiology of the past is the etiology of the moment, plus bacteria and other parasites which thrive wherever they find a favorable home, but which are inoccuous under other circumstances.

THINGS WORTH KNOWING ABOUT BEES

The recovery of general business has extended everywhere into the mysterious civilization of the insect world, including the activities of bees. Bees speeded up their work so much in 1922 that they yielded a larger amount and a better quality of honey than ever before if the report of the United States department of agriculture is correct.

We often use the expression "Busy as bees" without realizing just how busy bees really are. They toil from sunrise to the last glim of light after sunset at the height of their activity and survive only two months of this arduous existence when they are replaced by others born to take their places in the ranks. They work until their wings are worn out and die on they way loaded with nectar they have gathered. They foolishly work themselves to death and leave the fruits of their labors for others to consume, like the man who works himself into an untimely grave and leaves his fortune for others to squander.

When a boy spreads his bread or wheatcakes with honey the amount represents many bee-loads of nectar, for to make a pound of honey bees have to carry 37,000 loads from the fields to the hive. Like in many human actions nine-tenths is preparation and one-tenth realization, since after this infinite patience and elaborate preparation all vanishes down the human throat in the twinkling of the eye.

When autumn arrives there is rest for some and only death for the many. The queen and some of the workers will survive the winter. In the spring these survivors will houseclean the hive and build new comb-cells in which the queen will lay her eggs to restore the numerical strength of the swarm for the approaching season. The workers which survive the winter are divided into two squads in the spring, the one gathers food while the other serves as nursemaids for the babies. Workers are sexually deficient females (hybrids) a condition obtained by a special order of restricted diet, while the queens and drones are sexually perfect through a special diet that produces a full development. The man-bees, or drones, are of little use except as professional husbands, dodging work, bluffing, loafing, "showing off" and feigning to work but never gather enough food for their own sustenance. They gorge themselves, on the contrary, with honey brought in by the womenfolks.

The life of a bee is an existence of no permanence, brief and seemingly futile; they never seem to get anywhere. A philosopher might wonder if this, is not also true about the activities of man.

T. A. Kragness, D. V. M.
Chief Bee Inspector of Illinois.

VOTE AGAINST COUNTY AGENTS

Election returns received from South Dakota indicate that at least four counties of that state have voted to reject their county agent. In Hand county, where a fight was staged on the issue, the proposition to support the county agent was rejected by a good majority. Jones county rejected the proposition by 47 votes. In Yankton and Jerauld counties, according to a Sioux City daily, "the matter of giving support to county agents was not popular with the voters."

It seems a pity that a project starting out with such high aims and opportunities should have been marshaled in such a manner as to actually incur the opposition of a majority of the people it is designed to help. Greed, encroachment upon the rights and prerogatives of others, strife for sordid commercial advantages, misleading publicity that is obnoxious alike to both the commercial and scientific mind, attempts to make good without regard to the matter of qualification are but a few of the reasons why this big movement to help agriculture is meeting organized opposition instead of arriving nearer and nearer to the goal of universal support.

When those in command can see their way clear to travel the scientific instead of the commercial road to success, like the experiment stations of the country are doing, they may reasonably expect to gradually endear themselves to the people and to fix their project solidly into the wheels of society, but as VETERINARY MEDICINE has so often tried to point out, an enterprise that shunts aside the existing order with impunity will find a rough and rugged road to travel.

Commerce and science do not synchronize. They won't work in double harness—the one pulls the other down and makes it useless.

In 1921 there were food products valued at $672,975,000 imported into the United States, according to the report of the United States department of agriculture.

DENIES TRAINED-ANIMAL ACTS BRUTAL

I want to take exception to your article in the November issue about the brutality of the trained animal acts. I can see that the writer of this editorial does not know much about the training of animals. Some animal trainers to be smart may whip or torture animals but such trainers never have well-trained animals as they will not work when trained that way. One must reward with kindness, sugar, feed, etc., to make an animal work well. There are many balky horses, for example, that were made balky because the man who trained them (or rather tried to train them) used punishment.

I have seen veterinarians castrate animals, operate on fistulas and do other major operations at clinic, torture more than all the animal trainers ever did and you say nothing about it. Such infractions seem all right but when a trainer comes along and cracks his whip you want to put him out of business. I have never seen men as cruel as the average veterinarian and many of them know enough about submission to put a bandage on a leg with the use of a twitch.

I have trained animals since I was twelve years old and have never seen one that could be trained by brutality as you say. At this time I have about twenty head of trained animals from geese to dogs and horses and can show that any one of them will leave its feed and come to me for a lump of sugar. You strain at a gnat and swallow a camel. Look at some of the veterinary colleges and around the clinic and you will find more to write about than at the training quarters of the animal trainer.

Danville, Ky. C. W. Fisher, D. V. M.

B. A. I. SYSTEM POPULAR

The system of swine sanitation worked out by the U. S. department of agriculture and put into operation in McLean county, Illinois, is attracting attention in many other places. The roundworm scourge which the system aims to eliminate is one of the important causes of swine losses.

Briefly the system consists in thorough cleaning of the farrowing pens, scrubbing the sows before they are put into the clean pens, keeping the sows and litters strictly in the clean pens until they are hauled out to worm-free pastures, where they are kept away from contaminated hog lots until the pigs weigh 100 pounds, after which they are past the greatest danger from worm infection. The working plan may be obtained without cost by any one who will write to the department of agriculture, Washington, D. C.

BELLADONNA POISONING

The editors of the Therapeutic Gazette (Vol. 46-203) from the Lancet, state there are two points in regard to belladonna poisoning, in the capricious way in which it affects its victims. The use of plaster may cause rash, and loss of power of accommodation. Atropin is rapidly absorbed and rapidly secreted by the urine. The poison works itself off in sleep. The various species of Datura produce substances which in their action are isomers of atropin and hyoscyanmin. Datura poisoning is rare in the United States and in Europe, but in Cairo, Egypt, it is, next to alcoholism, the most common form of poisoning.

GRADUATE COURSE OF THE INDIANA VETERINARY COLLEGE

The Indiana Veterinary College at Indianapolis announces its third graduate course for practitioners for the last two weeks of January, 1923. The growing popularity of this course speaks well for the plan of this old established college to give a short, intensive and concise course that will meet every need of veterinarians in practice by men especially selected as to their qualification in their respective specialties. The course in former years included diseases of swine and swine problems; bovine gynecology; bovine practice and equine medicine and surgery. This year the course we are informed will be enlarged to include diseases of small animals and of poultry to be given also by nationally known specialists.

The course affords the opportunity to obtain an intensive instruction on all matters of current importance in the least possible time and at the least possible expense. It is a worthy departure on the part of this institution and deserves patronage. At this moment when veterinary practice is undergoing revolutionary changes and much is expected of the veterinarian along lines for which he has not been especially trained, a great deal depends upon the attitude taken towards graduate work. In short, if we do not qualify in the new phases of veterinary science there is the danger that someone else will replace us.

Our future depends a great deal upon how well we patronize these courses, the associations, and the short courses given by our various universities. By attending them we thwart intrusion upon our calling; by neglecting them we leave a big gap open.

PUTS BLAME ON THE COW

In your November number on the editorial personal page under the caption of 'Put the blame where it belongs,' a quotation from the Chicago Health Department bulletin is cited and the comments made about sanitation to improve the resistance of cattle to tuberculosis, and the opinion is expressed that the hygiene to be followed is most too great to impose upon the stock owner. Other articles have also appeared in your journal along the same lines, in a way to appear that the veterinarian is greatly discouraged in the attempt to clean up the disease in cattle.

It would seem to me that these arguments are somewhat beside the point, and show a pessimism not warranted by the facts. It is claimed human tuberculosis is a house disease and by analogy bovine tuberculosis is a barn disease. While it is true this disease can be contracted from infected barns, yards, etc., I believe the main factor in the spread of bovine tuberculosis is the tuberculous cow. I have heard even veterinarians claim that if cattle were selected from herds in the hills, which are in the open most of the time, no tuberculosis would be found in such a herd.

Many owners often tell me they have solved the problem of infection, that it is in the silage as most of the reacting cattle taken in the vicinity are fed silage. I tell these owners what I believe to be the facts, namely that you first must have a tuberculous cow in your herd or the barn is infected to produce the disease. I have tested thousands of range cattle in the West, cows in the worst barns one can imagine, as well as in barns as sanitary as science and money combined can evolve, and have come to the conclusion that the real menace to the herd is the tuberculous cow. Not that cleaning and disinfection are to be slighted in any way, but we must not lose sight of the fact that we must get every last tuberculous cow if we are to have clean herds and wipe the disease from cattle in the United States.

To improve the resistance of the cow to tuberculosis, as we do with the human race, is a different matter altogether as we can arbitrarily eliminate the diseased cow, while we cannot do so with human beings. Again, if I am any judge, the evidence of a great amount of resistance to this disease in the cow is wanting I can cite dozens of instances of badly infected herds, kept under the most sanitary conditions possible, many of these herds were never in a barn, so I conclude that the cow does not possess any great resistance to this disease.

One testing cattle as a vocation will come to recognize that there are differences in the virulence of the germ in the different herds. A cow having a local lesion may be with a herd for five years and yet not transmit the disease, but in another the disease is so virulent that in a few months nearly every animal is infected regardless of sanitation, if they mingle together in the herd, apparent healthfulness or any other condition. In fact the very best looking animals may show the worst lesions.

We have cleaned up some of the badly infected herds, thousands of them, and we are getting toward our goal of a tuberculosis free country and need all the encouragement we can get. There should not be any reason why any veterinarian should become a pessimist. Think it over and think in terms of cows and not human beings.

Bath, N. Y. C. C. Walker

From present appearances the State of Washington will be the first one of the 48 states to completely wipe out its bovine tuberculosis.

Minnesota has now definitely planned to adopt the area plan of tuberculosis eradication. It is planned to charge owners for the testing at the rate of 25 cents a head and to pay the indemnities in the usual way.

The distribution of black leg vaccine was discontinued by the United States bureau of animal industry July 1, and the many applicants for this product are now advised to obtain it from manufacturers of commercial biologics.

It is not disputed that compulsory pasteurization of skimmilk, whey and butter-milk would help a great deal to control tuberculosis of farm animals, but just why this is not insisted upon as a preliminary control measure instead of waiting until animals grow up with the disease and then go to the expense of testing and slaughter, is difficult for the uninterested bystander to comprehend.

Editors' Personal Page

There is much more to be learned than we now know, so do not quit reading.

The average man or woman knows little about science and less about scientists.—McKenzie.

In Europe laymen are not allowed to use biologics in the treatment or prevention of disease of live stock.

The absolute triumph of a profession depends more upon the conduct of its individual members, than upon concerted action of the whole.

George Ade speaks of Kenesaw Mountain Landis as a go-getter and of Will Hays as a wound-healer. What an influence two leaders with such attributes could wield among us.

Oh, yes, the theory of evolution is probably as good as any, but it would inspire more confidence in our feeble minds and would have fewer opponents if it had done just a little "evoluting" during the past 50,000 years.

Do you use these words correctly? A **herd** of ponies; a **drove** of cattle; a **flight** of birds; a **band** of horses; a **flock** of sheep; a **school** of fish; a **muster** of peacocks; a **covey** of partridges; a **brood** of chicks; a **swarm** of bees; a **stand** of plovers; a **litter** of pigs, etc.

Is heaves in horses emphysema of the lungs as we have been given to believe or is this classical lesion but an effect of a functional derangement of the diaphragm, a paralysis of the diaphragmatic innervation, like roaring is paralysis of the innervation of the larynx? See article by Simonnet and Medynski, this issue.

"The art of healing has but a single ethic:—to live in charity, doing to others as we desire them to do to us and to all as we have opportunity."—Agustin of Hippo.

Horse practice while not booming is reported to be fair by several city veterinarians interviewed during last month.

Unlike material wealth, knowledge is not the exclusive possession of privileged persons.

One is much more likely to reach Utopia by endearing oneself to others than by the sordid chase.

Did you know that the automobile fatalities were 30 people each day, during 1920?

The old expression "The operation was successful but the patient died" is usually unfair for the reason that a patient as a rule does not die because an operation was performed, but in spite of it.

Well meaning resolutions which die out on the walls of our meeting halls represent just so much energy lost. We should be resourceful enough to make our messages heard and soak in where they will do some good.

If veterinarians preached about the good qualities of milk for children instead of the dangers (at the ratio of say, 50-50) the dairy business might be made to pay and the veterinary practitioner might find something to do.

Just to show how stupid the gynecologists really are some veterinarians are now going over their heads to give pregnant women advanced notice that Bang's bacillus might make them abort if they drank milk from cows affected with abortion diseases. And Barnum thought there was only one born every minute. His estimate was low.

There is an astonishing orthographic variation in the spelling of the immunizing agent against hog cholera appearing in veterinary literature. Some use the form "antihog-cholera serum," some "anti-hog-cholera serum," some "anti-hog cholera serum" and other prefer "anti-hog cholera serum." As two or more nouns used as a descriptive adjective should be connected by a hyphen the preference goes to "antihog-cholera serum."

Purely Practical

Swine require approximately one part of salt to 450 parts of feed.

Growing animals require salt and mineral supplements for maximum development.

The most palatable form of calcium for cattle and swine is steamed bone meal.

Sub-conjunctival injections of potassium iodid at the strength of one-half percent in sterile water are sometimes helpful in bad cases of periodic ophthalmia.

The mistake usually made in trephining to remove nasal tumors (polypi) is that of perforating the skull into the sinuses instead of the nasal fossa. To remove tumors the openings should be at the "roof" and not at the side of the skull.

In trephining the skull of horses to evacuate collections of pus in the frontal sinus the opening is invariably made too high. To properly drain this sinus the perforation should be made at the point where a line connecting the anterior end of the facial crest crosses the maxillo-nasal suture.

LUBRICATING JELLY FOR STOMACH TUBE

℞

Powdered ulmas	1 oz.
Glycerin	4 ozs.
Water to make	16 ozs.

Dissolve the elm bark in 10 ounces of warm water in a closed vessel for an hour or two, strain and then add the glycerin and water to make the desired quantity. A preservative may be added to prevent decomposition.—Reeds.

There are more forms of pyemic arthritis than is generally supposed.—Fitch.

Sheep suffer more from parasitic diseases than any other animal.

It is more profitable to feed skimmed milk or buttermilk to poultry than it is to pigs.

An occasional horse is observed that will kick by the hour when stabled. Will some one give the cause and remedy for this evil?

Thiosinamin or fibrolysin (Merk), according to a recent observation by Simonnet and Medynski of Paris, will cure a "heavy" horse for five to six months.

The administration of three or four drops of tincture of iodin (10%) in gruel five times a day is said to be an excellent remedy for diarrheal enteritis in calves.

The presence of sugar in the urine is of greater value in the diagnosis of suspected cases of rabies than glandular alteration or Negri bodies, according to Professor Porcher of Alfort.

PROFESSOR EVVARD'S MINERAL MIXTURE FOR SWINE

℞

Common salt (flake form)	30 parts
Spent bone black, bone meal, or bone flour	25 parts
Commercial kainit, potassium chlorid, or wood ashes	12 parts
Flowers of Sulphur	
Air-slaked lime, or limestone (finely ground) aa	10 parts
Glauber's salts	5.7 parts
Epsom salts	5 parts
Copperas	2 parts
Potassium iodid	0.3 parts

Mix and administer ad libitum.

Important News and Announcements

W. LESTER HOLLISTER
President Illinois State Veterinary Medical Association

When a man is elected to the office of president of any one of the big state associations in this country he doesn't need any further scrutiny as to his general deportment as a professional man; he is decorated with the brand of approval and is entitled to the distinction of being called a loyal and devoted colleague.

Hollister did not have to hide among strangers to succeed; he practices today and has always practiced in the town in which he was born—Avon, Illinois—the center of the horse, hog and corn industry of the state. He is 43 years old, a graduate of the Avon high schools (1898) and of the Chicago Veterinary College (1910). In 1918 his practice grew to such proportions that he took on a partner, C. L. Hayes, changing the name of the establishmen to Hollister & Hayes. Besides practicing veterinary medicine these enterprising young men have engaged in the hog-breeding industry and are owners of one of the finest pure-bred Hampshire herds, in that part of the corn belt. the Mississippi Valley Veterinary Medical Association from 1915 to 1922, and has been one of the guiding influences in the organization and development of that well known local association, and was elected president of the state association December 1921, after serving as vice-president for one year and as an active member of important committees since he became a member soon after graduating. During the war he was an officer of the veterinary corps.

FORTIETH ANNUAL MEETING OF THE ILLINOIS ASSOCIATION

The annual meeting of the Illinois State Veterinary Medical Association will be held in Chicago, December 5, 6 and 7, 1922. The headquarters will be at the Lexington Hotel, 22nd street and Michigan boulevard, where the sessions of the first two days will be held. On the third day, December 7, the meeting will adjourn to participate in the program of the United States Live Stock Sanitary Association at the LaSalle Hotel.

The Illinois, which is the largest state association in the country, always carries out an exceptionally interesting and instructive program, featured by the best talent obtainable. This year the reporters secured are: Drs. U. G. Houck and Maurice C. Hall of the United States bureau of animal industry of Washington, D. C.; Drs. Robert Graham, I. B. Boughton and L. E. Card of the University of Illinois; Drs. A. T. Kinsley and A. D. Glover of Kansas City; Dr. E. Merillat of Wooster, Ohio; Dr. W. J. Embree of Chicago; Dr. T. H. Ferguson of Lake Geneva, Wis.; Dr. C. Schmitt of Dodgeville, Wis.; Dr. Edw. A. Cahill of Indianapolis; Dr. F. A. Laird, chief veterinarian of Illinois; Dr. E. L. Quitman of Chicago; Dr. R. E. Kluck of Foreston, Ill.;

Drs. A. M. Emmett and H. Preston Hoskins of Detroit, Mich., and others.

Members and visitors are invited to bring their ladies to participate in a theater party. All veterinarians visiting Chicago on account of the International Live Stock Exposition and United States Live Stock Sanitary Association are invited to participate in the sessions.

VETERINARY CORPS NEWS

Lieut. Col. William P. Hill, who is known to the veterinary profession as the first chief veterinarian of the American military forces in France during the war, has recently been assigned to duty as commandant of the Army veterinary school at Chicago.

Major Walter Fraser is relieved from duty at Camp Knox, Kentucky, and is ordered to Columbus Barracks, Ohio, for duty as station veterinarian and assistant to the corps area surgeon.

First Lieut. Philip H. Riedel has been transferred from Brooklyn, N. Y., to Fort Bliss, Tex., for duty.

First Lieut. Robert P. McComb is relieved as district veterinarian of Washington and has been sent to Fort Humphrey, Va., for duty.

First Lieut. Harry C. Fullington, of Seattle, Wash., V. O. R. C., has been assigned to the 162nd field artillery and First Lieut. Ernest E. Chase, V. O. R. C., of Portland, to the 361st field artillery.

CONGRESSMAN McKENZIE NOT HOSTILE

President W. H. Welch and Secretary H. Preston Hoskins of the American Veterinary Medical Association; President W. Lester Hollister and Secretary L. A. Merillat of the Illinois State Veterinary Medical Association; President L. B. Swingley and Secretary R. E. Kluck of the Northwestern Illinois Veterinary Medical Association; J. S. Koen of Bloomington; F. D. Yeager of Lena, and J. G. Hayes of Freeport, conferred with Congressman K. J. McKenzie of the House Military Committee at Freeport, Illinois, Friday, October 20, to discuss matters appertaining to the future of the veterinary corps of the army. The meeting was brought about by unfavorable reports as to the attitude of Congressman McKenzie toward veterinarians in the military service and resulted in a mutual understanding of all angles of the situation.

MILITARY VETERINARIANS WILL BANQUET

Invitations are out for all veterinarians of the regular army and veterinary reserve corps and for the discharged veterinary officers of the recent war to attend a formal banquet at the LaSalle Hotel, Chicago, December 7, at six-thirty P. M. Full uniform will be the credential for admission to the banquet room and all eligible are requested to announce their intentions to Lieut. Colonel W. P. Hill, 1819 West Pershing road, Chicago, as early as possible. Several addresses will be made on veterinary military subjects of current interest to the veterinary profession and veterinary service of the army. An all-around congenial evening's entertainment is assured.

In a list of 130 applicants who have accepted appointments in the reserve corps published in the Army and Navy Register September 30, only two were veterinarians. These were W. E. Muldoon, of Manhattan, Kansas, with the grade of major and H. J. Trotheridge, of New York City, with that of captain.

The second annual veterinary conference of the Kansas State Agricultural College will be held at Manhattan during "Home and Farm Week," February 5-10, 1923. The conference will feature diseases of swine.

The Nebraska State Veterinary Medical Association will meet at Lincoln, December 12-13. There will be a literary program of unusual merit and scope, a clinic at the agricultural college, a banquet and an entertainment for the ladies. A large attendance is expected. The officers are: Geo. A. Young, Syracuse, president; C. C. Hall, Omaha, vice-president; C. J. Norden, Lincoln, secretary-treasurer.

The winter meeting of the Minnesota Veterinary Medical Association will be held at the Radisson Hotel, Minneapolis, January 10-11, 1923. Secretary Fitch promises an instructive program and prospects of a large attendance. The officers of this association are: W. L. Boyd, president; A. J. O'Hara, first vice-president; B. L. Cook, second vice-president; C. P. Fitch, secretary-treasurer. The Board of Trustees is Drs. Boyd, Nelson, Lees, Remington and Fitch.

LADIES' RECEPTION COMMITTEE, ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION, 1922

Left to right—Mrs. E. L. Quitman, ChicagoMrs. W. Lester Hollister, Avon; Mrs. W. H. Welch, Lexington; Mrs. J. T. Hernsheim, Chicago; Mrs. L. A. Merillat, Chicago.

OFFICIAL OPENING OF THE NEW ONTARIO COLLEGE

Principal McGilvray sends herewith a hearty invitation to all veterinarians to attend the official ceremonies planned for the opening of the new Ontario Veterinary College at Guelph, Tuesday, December 12 at 2:30 o'clock P. M., and the banquet that will be held on the evening of the same day.

Among the speakers announced are: Hon. E. C. Drury, premier of Ontario, Hon. Manning W. Doherty, minister of agriculture for Ontario, Hon W. R. Motherwill, minister of agriculture for the Dominion; Hon S. F. Tolmie, M. P.; Sir Robert Falconer, president of the university; Dr. R. G. Rutherford, board of railway commissioners, Ottawa; Dr. F. Torrance, veterinary director general, Ottawa; Dr. J. R. Mohler, Reynolds, Ontario agricultural college and others.

The Ohio State Veterinary Medical Association will hold its annual meeting of 1923 at Columbus, January 31 and February 1 and 2. The business session will be held at the Deshler Hotel, January 31 and the banquet, February 1. The rest of the program will be carried out at the veterinary department of the university.

Secretary Moss promises a practioner's meeting featured by the best talent obtainable. It will be a typical Ohio meeting, a social and fraternal treat given for and by Buckeye veterinarians to which everybody from everywhere is invited.

The officers of the association are G. W. Cliffe, Upper Sandusky, president; C. W. Fogle, Leipsic, vice-president; D. C. Hyde, Columbus, treasurer and Harry T. Moss, Dayton, secretary. The executive committee is Drs. W. A. Axby, H. Fulstow and W. F. Wise.

The North Central Iowa Association met at the Chamber of Commerce, Fort Dodge, October 10. Among the contributors were: W. B. Niles, of the United States bureau of animal industry, who spoke on hog cholera immunization; Drs. Stange and Bergman of the state college and J. H. McLeod, of Charles City, who read a paper on municipal milk inspection. C. E. Juhl, of Osage, and G. W. Cady, of Mason City, were also speakers. The Fort Dodge Serum Company entertained the members and visitors at a banquet at the K. C. Hall. J. H. Lynch, of Fonda, is president, and H. J. Shore, of Fort Dodge, is the secretary.

The Eastern Iowa Veterinary Association held its annual convention at Clinton, October 25-26. Sixty-five members were present. A good program was provided and an enjoyable entertainment was given to the members and ladies, including a banquet and dance, featured by the famous film "Out of the Shadows." The contributors to the program were Drs. Roach, McIntire, Haskins, Crow, Morgan, Schrader, Odgers, Buxton, Wolfe, Ahlers and Hell. The officers are J. H. Spence, Clinton, president; C. M. Morgan, Manchester, vice-president; L. B. Graham, Cedar Rapids, secretary-treasurer. Drs. Hell, Crow and Potter constitute the personnel of the executive board.

The Treatment of Heaves With Thiosinamin*

By H. Simonnet and Ch. Medynski, Paris, France

AS THE professional press has called attention to the fraudulent use of thiosinamin (fibrolysin-Merk) by the Germans in masking heaves in horses restituted in accordance with the treaty in Versailles, it was thought interesting to investigate the exact action of this agent. In fact, the question does not limit itself to the restitution animals but can involve animals purchased in central Europe on account of the favorable rates of exchange at this time as well as special types of horses (ponies, etc.) that may be imported into France. Besides, the fraud may become a common practice in the French markets.

In our tests we employed thiosinamin in a solution of salicylate of sodium, 5% at the rate of one gram of thiosinamin to 10 cubic centimeters of the sodium salicylate solution.

The solution thus made is limpid. When cold it is slightly cloudy, but the cloudiness soon disappears when the ampoules are placed in a water-bath at 37° C. for a moment.

The intravenous injections require no special precautions; they produce no disagreeable reaction and when a drop is injected hypodermically, there is no edema.

Clinical Observations

1. A Britain mare, nine years old, affected with chronic roaring and heaves, operated for the former with William's operation, was then treated with intravenous injections of thiosinamin at the rate of one gram every five days during 40 days—from June 1 to July 10.

In spite of the warm weather the mare became useful already for fast work toward June 20, at which time the flank movements were less pronounced, and attenuated to disappear towards the 35th day of the treatment, to the point that an uninformed observer could not have picked out the mare from the other horses in the stable. The coughing was less frequent whether a large allowance of roughage allowance was given or whether the ration was limited to chopped straw and molasses. The discharge showed nothing in particular and was not abundant. The sounds observed by auscultation and percussion were not changed.

At no time was the mare given any drugs reputed as specific against heaves (arsenic, ergot, veratrin, etc.).

Later, the results of William's operation did not remain as good as at first; the mare showing some distress in respiration as a result of the laryngeal paralysis, but neither the cough nor the jerking respirations reappeared and the animal proved useful during six months.

2. Mare, a cross-bred Anglo-Norman, 15 years old, presenting pronounced symptoms of heaves, was treated under the same conditions as the former, July 30, August 3, 8, 13, 18, 23, 28 and September 2, 1921.

She was submitted to moderate work during the period of the treatment, even during hot days. She was strikingly improved in health, gaining 40 kilograms in weight. The cough disappeared toward the last of August and on September 15 the jerking respirations were completely effaced. Later, we lost sight of her.

3. During the same epoch, a Hungarian horse, 10 years old, of light type, used in a delivery service, presented symptoms of acute heaves to the extent of being absolutely useless. Administration of the usual medicaments (arsenic, etc.) having proved ineffectual, it was decided to try thiosinamin before condemning him. The treatment was given August 3, 8, 13, 18, 23 and 28, and on September 2 and 7, 1921.

On September 10, being less than 40 days from the beginning of the treatment the horse was put to work to the great satisfaction of the groom of the stable where the horse was a favorite. The apparent state of recovery continued until February, 1922, when the cough began to reappear.

The jerking respirations had not yet returned but a certain distress could be observed while at work during the succeeding weeks. Towards March 15 the heaves again became manifest and by April 15, seven months after the heave syndrome had disappeared, the same condition as existed before treatment, recurred.

4. The following observation is especially interesting, in that the subject was destroyed on account of an accident several weeks after an apparent cure had been obtained.

A Percheron stallion, used as a draft horse, was so "heavy" that the respiratory sounds caused by the jerking respirations could be heard at a distance. To employ the expression of the owner who understood well the gravity

of heaves, the subject in question "en avait une bonne voie."*

The patient was completely useless, even at a walk and his destruction was the only economic solution of the situation, especially because the general health was getting worse day by day. The appetite was fair but the emaciation was considerable. In spite of these conditions, treatment began October 3.

Within ten days the general condition was improved. The appetite was better and the horse could be used for toeing short hauls around the docks. Thereafter as the horse was able to earn his keep, the treatment ceased to be onerous.

At the end of the first month the improvement was so pronounced that the horse could be used without interruption for draft purposes. During the whole treatment the symptoms found on auscultation and percussion did not vary much. The cough disappeared first, and the nasal discharges were too slight to attract attention. The "heavy" respirations attenuated and disappeared entirely by November 10, which was the 37th to the 40th day after the initial treatment.

This succession in the disappearance of the symptoms was constant in all of the cases we had occasion to observe. During this interval the patients can be considered as cured since they can render the same service as normal horses. This subject worked so hard that it fell a victim of founder to such a degree that it had to be killed.

At the autopsy, the parietal pleura was found normal, the summit of the left lung presented an island of chronic broncho-pneumonia; and both lungs showed lesions of localized, vesicular emphysema on the anterior lobes and along the posterior borders.

The extent of these lesions did not seem to harmonize with the state of the animal at the beginning of the treatment (condition so grave the animal could not work). It seems the trouble was more a functional than an anatomical disorder.

The histological examination showed vesicular, emphymatous lesions characterized by distension of the alveoli, rupture of the elastic fibers, and without indication that either these or the broncho-pneumonia were in the process of healing.

These observations lead to certain conclusions:

From the practical point of view: Thiosinamin produces an improvement in worthless "heavy" horses to the extent that they are made as useful as normal subjects. Although the improvement is not permanent, the subjects can be used at least six months and are then more valuable for slaughtering.

From the view point of the pathogenesis of heaves: In the last case reported the gravest lesions were not in the pulmonary parenchyma. In fact, lesions of emphysema of considerable extent are often found at the autopsy of horses dying from accidental cause or in the abattoirs, which were never suspected of having heaves while living, nor suffered from any physiological hindrance.

On the other hand, the improvement observed, that is to say the disappearance of the cough and jerking respirations and the improvement in the general health, does not seem to be associated with any problematic reconstitution of the pulmonary alveoli. The essential trouble should rather be attributed to the jerking respirations whose cause might be sought in a functional derangement of the diaphragm.

Laulanie has showed experimentally that heaves "Betray sudden suspension of the diaphragm during its respiratory oscillation. It is this sudden cessation of the strength of the diaphragm that is reflected outside by the violent abdominal movements."

In the light of these classic ideas it is reasonable to suppose that thiosinamin acts by exciting the diaphragm through the medium of the phrenic nerves or their central origin, and an experimental and clinical study of its action might clear up the disputed pathogenesis of heaves and pulmonary emphysema. And would it not be possible to connect paralysis of the diaphragmatic nerves, by experimental section, by mechanical compression, through infectious causes, or by intoxication or auto-intoxication, with what is known of the role played by the recurrent nerves in the pathogenesis of roaring?

From the view point of redhibitory vices: After 40 days of treatment and for a period of five months or more the patients present no objective phenomena of the heaves syndromes. The cough ceases with its typical characteristics (dry, freakish, abortive); the jerky respirations which attract the attention of the buyer disappear completely or to an extent that they are not perceived; the character of the discharges are not abnormal; and the only symptoms are those that might be observed by auscultation and percussion. The coexistence of the vesicular murmur and hypersonority in certain points

*Idiom "H—l of a fix."

and the observation of crepitant rales and dry sibilant rales, are the only means by which a practitioner could make a diagnosis in cases thus treated.

But the nine days, accorded by the law of August 2, 1884, and regarded as sufficient time to disclose frauds from potion, secret remedies, etc. with a stramonium base, called "bande noire" (black company) and used by dealers to dupe the innocent, are notably insufficient in the case of a "heavy" horse "plugged" with thiosinamin.

It would be necessary to search for thiosinamin or its vehicle in the organism, which, a priori, would not be possible because the cure apparently lasts for a period of five months or more, during which time the fibrolysin would be eliminated.

The expert could not demonstrate the symptoms furnished by auscultation and percussion and would have to make a differential diagnosis between chronic pneumonia, chronic bronchitis, heart disease and pulmonary emphysema. It is very probable that the buyer would perceive the fraud too late to institute proceeding against the dealer and expert testimony would be of no service.

Furthermore is it absolutely logical to declare pulmonary emphysema redhibitory knowing that a "heavy" horse is as useful as a normal one once that the jerky respirations and cough have disappeared, both of which are due to an affection of the diaphragm?

It seems reasonable to disassociate:

1. Pulmonary emphysema, comparable in the horse, as to its clinical symptoms, its anatomo-pathological lesions, and its pathogenesis to that found in man, the dog, the ox and which is not accompanied with labored respiratory movements of the flanks from:

2. A special dysponea of the horse related to a pathological state of the function of the diaphragm (heaves) resulting from some undetermined influence, probably toxi-infectious, reflecting upon the pulmonary parenchyma.

Thiosinamin or allysulphocarbamid, ally-sulphno-urea, allythio-urea with the formula:

$$S=C<\begin{matrix}AzMCH_2-CH=CH_2\\AzH_2\end{matrix}$$

FORMULA

It is formed by the action of ammonia on the essence of mustard (isosulphocyanate of allyl. It is obtained by maintaining a mixture of two parts of essence of mustard, one part of absolute alcohol and seven parts of ammonia at 40° Centigrade. The crystals of thiosinamin are deposited in the course of several hours. They are rhomboid, colorless and fusible, bitter, soluble in 30 parts of cold water, more soluble in warm water and very soluble in alcohol and ether and in glycerinated water. Salicylate of sodium, benzoate of sodium, the phenols and especially resorcin increases its solubility in water. Antipyrin in the proportions of one molecule of thiosinamin gives by simple titration at about 30° a liquid syrup very soluble in water that remains unchanged for several months at ordinary temperatures. Heat exerts a destructive action.

Merk's fibrolysin is a mixture of thoisinamin (one molecule) and salicylate of sodium (a half molecule) dissolved in eight parts of water.

*Bulletin de la Societe Centrale de Medicine Veterinaire—Sept., 1922.

FOOD POISONING IN CHICKENS

The following report of a condition occurring in poultry in the practice of Dr. S. L. Stewart of Olathe, Kansas, is of considerable interest. The doctor reports that there was a rather extensive loss of poultry in his community during August and September. The diseased condition occurred in flocks under practically all conditions. The character of the feed and the general surroundings appeared to have no influence upon the prevalence of the disease or its fatality.

Symptoms

The fowls in question first appeared droopy; there was inappetence and within a few hours they would sink to the ground in a prostrate condition and as a rule would die within a few hours. The wattles and comb were generally anemic. There was no general rise of temperature.

Autopsy Findings

After autopsying several of the dead fowls without finding any definite lesions, it was noted that the crop of each bird autopsied contained several larvae. On further examination it was found in this particular outbreak that the larva in question occurred in each instance. On careful investigation of the surroundings in each outbreak, it was possible to find putrefying carcasses of rats, fowls or other animals in which larvae were developing.

Diagnosis

This condition was diagnosed as food poisoning or ptomaine poisoning.

Treatment

By withholding all food for several hours, eliminating the source of larvae and the giving of mild purgatives, practically all slightly affected birds recovered and no new cases occurred. One interesting thing concerning these outbreaks was that in some instances after cooping up the fowls, the disease occurred even two or three days after all possible source of contaminated foods were eliminated.

Comment

An interesting thing concerning the above outbreak is that Doctor Sanders of St. Louis has published several pamphlets relative to the effects of the larvae of the Lucillia caesar in

which he has given a detailed description of symptoms in fowls in outbreaks similar to the ones above described by Doctor Stewart.

An interesting question is: are the larvae responsible for the condition or is their occurrence merely a coincident?—A. T. K.

BRACHIAL PARALYSIS IN HOUNDS

Paralysis of a fore limb due to some form of violence to the region of the brachial plexus is a common accident in dogs and especially in hounds and field dogs. These injuries are often caused by automobile accidents but in the hunting dogs they are most often traced to collisions with snags, stumps, trees, etc., accidentally hit while running fast. The beagle hound is more often injured in this manner

than the larger breeds of sport dogs for the reason that they work so much in brush and thickets in contradistinction to bird dogs whose theatre of operation is more in the open and whose pace in the hunt is much slower and deliberate than the running hounds: beagles, coon dogs, grey hounds, etc.

The photographs furnished us by Dr. C. W. Cass of Toledo, Ohio, are of a hound affected with this condition. They graphically portray the results of this accident. The limb in Fig. 1 is seen to be completely paralyzed and as a result of secondary bruising from trailing and striking objects while running and walking about, the limb is so painfully excoriated and inflamed it is a serious impediment.

Like similar forms of peripheral paralysis in other animals, particularly horses, the course of the disease depends upon the character of the nervous injury. If the leg nerves are damaged beyond repair the paralysis is permanent, while on the other hand if the injury is such that the nerves axones are still capable of regeneration to the point of restoring their continuity, the muscular action will likewise be restored..

Chronic cases are hopeless and call for amputation. The success of such operations is shown in Dr. Cass' case.

Fig. 2 shows the hound after amputation, which was done at the middle third of the arm

under anesthesia. Two No. 1 H. M. C. (Abbott) tablets followed by a few whiffs of ether were used. The hemorrhage was controlled by torsion of the vessels and offered no difficulty. Ligation did not seem to be necessary.

Fig. 3 show the patient a week later at which time healing was progressing exceptionally well, practically by primary union.

At the end of a month the hound was well, running about apparently ready for the chase.

"What's Wrong With the Veterinary Profession?"

By Edward M. Boddington, Secretary and Legal Advisor for the Associated Serum Compainies of America

THE fact that the veterinary profession is not attracting its proportion of students in preparatory schools and colleges is not only regrettable but is alarming. A few decades at the present rate would mean that the live stock industry of America would soon be without skilled veterinary protection and must suffer serious devastation from disease. A profession must have group and individual possibilities combined in order to attract new energetic blood to its ranks. If public opinion is adverse to a man's profession, be he ever so wise and tactful, he will have tough sleighing. A profession is judged by the sum total of opinions formed by contact and experience with the individual members thereof. Why isn't the veterinary profession attractive to young men in school? There must be something socially, economically or psychologically wrong. The good veterinarian could probably diagnose the case better than an outsider, and we sincerely trust that some will undertake the task for the betterment and welfare of a most necessary and essential profession.

Some Shortcomings Related

A few constructive suggestions from those who have dealt constantly and must ever continue to deal with the veterinary profession might be advanced for your consideration: Inadequate state license laws; low standard requirements for admission to practice; inaptitude and failure of individual practitioners to keep abreast of the times in modern thought; failure of many practitioners to acquire, learn and use improved methods of treatment; tendency on the part of the individual veterinarian to isolate himself; lack of interest in the profession as a whole; that is, failure of many veterinarians to subscribe, pay for and read veterinary journals and new scientific treatises, lack of interest in veterinary associations; the permitting of pamphlet instruction to the laity without in any manner attempting to overcome adverse propaganda; lack of business methods in practice and failure of many to meet just business obligations. Some of these general things apply to many individual practitioners.

Patronize the Associations and Journals

If you don't wake up to a larger and bigger service to the public, you will fail to protect yourself and your profession. We believe the veterinary profession is more essential than the practitioner dreams of, and the force to place it where it rightfully belongs in the live stock industry of America must come from within and not without the ranks. The veterinary association is your principal spokesman. The practitioner should take enough interest in his state and national association to support it, not only in a small financial way but to willingly attend meetings for the purpose of raising both theoretical standards and practical standards. The veterinary journals and publications of America are the only monthly universal ties and threads by which the individual practitioner may link himself as a unit with the whole profession. The American veterinary profession should not neglect to use the splendid veterinary journals of the country as a forum for the expression of its thoughts. It is easy to let somebody else run things but the individual members of your profession must be their own marksmen and must do their own shooting. If your environment has lulled you into slumber and solitary confinement, the time is at hand when you must awaken to the many inroads and drawbacks facing your profession and put up the kind of fight which will make the profession the place in society it rightfully deserves.

Advertise

The farmers have gone through an abnormal, chaotic period in economic history, and since the veterinarian is a necessary adjunct to the live stock industry, he has not escaped the effects of the economic storm. It is unethical to advertise directly but if you don't tell the truth about yourself, demonstrate and sell your ability to your clients, you will be forever waiting for business

in a theoretical, ethical manner. A chairwarmer also longs, hopes and dreams of success but never attains it. Make the live stock industry of America realize and understand the necessity of veterinary service.

Business Judgment Lacking

As schools formerly neglected to train professional men in the fundamentals of business, there has been a laxity in the business judgment displayed by a large number of veterinarians, and other professional men throughout the country. Common fundamental business judgment must be used by every professional man. It is one thing to charge correctly for the service and treatment, and it is quite another thing to COLLECT a reasonable fee for such service and treatment.

If you don't collect your bills at the psychological moment, time and a cunning desire on the part of some of your clients to get out of paying will not only rob you for your service but will cause the hands of some of your clients to slip down into your own pockets and make you pay for serum and biological products.

A serum or biological house must have cash for their product. Good credit does not pay for the materials used and the overhead in production. A client who can't pay cash or in bankable securities isn't worth having. The failure of many a veterinarian who has contributed his share to the present status of the veterinary profession in the public's eye, can be directly chargeable to the utter lack of businesslike methods. The merchant can only extend credit to a customer who promptly meets his bills. You must sell your learning, experience and the treatment administered, for dollars; otherwise you will be a failure.

Serum Companies Establish Credit Rating

Other professions have business and commercial ratings but the veterinary profession has never been rated. The Associated Serum Companies of America has established an extensive credit rating system. Because of the many losses sustained through insolvency and bankruptcy and the failure of many veterinarians to pay their bills, the association found that a credit system was essential to the welfare.

Financial conditions demand cash and necessitate the sale of serum for cash.

Such a credit system, however, serves two good purposes; it protects the companies by listing the credit rating and standing of the members of the veterinary profession, and protects the honest veterinarian, who pays his bill, from the competition of the one who purchases on credit without any intentions of paying. If your competitor steals his serum, he, of course, can sell it and administer it cheaper than you can because it costs him nothing. The credit system is therefore a great protection to the good veterinarian and will in time eliminate those who are unreliable.

Grievances Cited

We might enumerate a few "business practices" which are common to some veterinarians. Some practitioners are working for nothing—they have $10,000 or $12,000 on their books all the time and can't collect enough money to pay their grocery bills. Farmers in any community soon learn Dr. Jones' weak spot and advise their neighbors to call him in because it doesn't cost them anything. Jones has the business practitioner backed off the map for a few years. But who finally comes out on top—the fellow that has a big clientele and works for nothing, or the veterinarian who collects for his services?

Some practitioners are in the habit of splitting up their credit account of $4,000 or $5,000 with six or eight serum companies and paying as little as possible on each bill to get by, hoping that they may outlive or outwit the six or eight companies which they think they have been fooling. Other veterinarians have credits booked with serum and biological houses of approximately $2,000. They make a payment of, perhaps $500, and in a day or so thereafter endeavor to secure an order for serums and biologics equal to the cash payment which they made. Sharp practices of this character are to be avoided and are only called to your attention to disclose the necessity for the commercial houses to accurately catalog and rate the members of the veterinary profession. We feel sure that we will have the cooperation and assistance of the good first class veterinarians in this regard.

The serum industry has passed the pioneer stage and is now pursuing a purely business policy. We recognize and urge the need of a veterinary profession. We must find a market for our products through the veterinarian, because he prescribes them and your profession is the only safe insurance the live stock industry can afford to support. It needs, however, new life and power from within to give it an important place in that industry.

According to press reports the state board of health of California has passed a regulation compelling the vaccination of dogs against rabies. The regulations provide for tagging of dogs so vaccinated.

Anthelmintic Medication for Parasites in the Lumen of the Digestive Tract

By Maurice C. Hall, Associate Editor.

In a previous paper the writer has summarized, in a general way, our knowledge of anthelmintics for the control of worms outside of the lumen of the digestive tract of man and animals, the definite knowledge on that subject in the fields of human and veterinary medicine not making a total too large for brief consideration in one article. In this paper the subject of drugs for the removal of parasites from the lumen of the digestive tract will be considered, primarily with reference to their use among domesticated animals, with little consideration of the rather large subject of anthelmintics used in human medicine to remove parasites from the lumen of the digestive tract.

We have at the present time quite satisfactory treatments for the removal of many of the common parasites of the digestive tract, the treatments in some cases being established by critical tests and the tests subsequently supported by clinical experience, and in other cases being established by clinical experience and clinical experience subsequently supported by critical tests. On the other hand, there are a number of parasites for which we have as yet no satisfactory treatment, notably the spirurids living partly in the lining and partly in the lumen of the digestive tract, and the tapeworms of birds.

FASTING

In administering anthelmintics by mouth, it is customary to fast the animals to be treated in order to diminish the amount of ingesta in the digestive tract, this ingesta acting as a diluent for the anthelmintic and also affording mechanical protection to worms in some instances. The length of the preliminary fast varies with the nature of the host animal and the location of the worm. A fast of 18 hours has been found to be adequate as a preliminary to treating horses for bots, but it seems necessary to fast a horse 36 hours in order to obtain satisfactory results in treating to remove strongyles from the large intestine. The directions given in regard to fasting should, therefore, be observed. Additional information is needed in some cases as to the length of the fast to be observed, but the directions are as accurate as it is possible to make them in the present state of our knowledge and in many cases a different fasting period, especially a shorter one, is known to give inferior results. Animals may be watered soon after treatment, but should not be fed for two to three hours, as feeding immediately after treatment defeats the purpose of the preliminary fasting.

MASS TREATMENTS VERSUS INDIVIDUAL TREATMENTS

There is always a demand for mass treatments where large numbers of animals are to be treated, and this demand is not limited to the farmer but includes some veterinarians. It is a very natural demand, since the individual treatment of large numbers of animals, especially those where the value of the individual animal, such as a chicken, is low by comparison with the larger domesticated animals, requires a disproportionately large amount of time in the aggregate. The farmer feels that the benefits derived from a treatment of this sort in such cases do not compensate for the expense incurred in paying a veterinarian for such treatments—and in some cases this would be true. For practical purposes, therefore, we may use mass treatments where a certain degree of benefit may be expected and where individual treatments, which would be more beneficial, cannot be used owing to the time and cost factors.

Mass treatments are usually in the nature of treatments by means of substances added to the feed. Animals are usually fasted before such treatments, but the fasting is not for the purpose of emptying the digestive tract, as a rule, so much as to make the animals hungry enough to eat food to which some more or less unpalatable anthelmintic has been added. The presence of the food directly diminishes the efficacy of the anthelmintics, but there is usually some anthelmintic action with suitable drugs and as the food dilutes the anthelmintic and in this way, as well as mechanically, probably protects the mucosa of the digestive tract against irritant action and retards absorption to some extent, somewhat larger doses of the drug may be tolerated than would be tolerated by a fasting animal which was not given feed with th-

drug. On the other hand, it must be remembered that where a drug is mixed with the feed for a number of animals, some animals will eat more than others, and perhaps get more of the drug than can be well tolerated, whereas other animals will find the drug too distasteful and will get too little to be of value. The animals which eat little or none of the medicated feed may be the ones which are most in need of treatment. Mass treatments are most used in the case of poultry, the animals having the smallest value per head and the ones which are kept in the largest numbers as a rule. Chickens and swine are probably the most difficult to catch of the domesticated animals, and swine are probably the most difficult to treat, these things accounting in part for the demand for mass treatments for these animals.

COMPLICATIONS DUE TO LARVAL WORMS PRESENT.

In a paper on the treatment of horses for the removal of worms the writer has called attention to the fact that there are many cases in which worms, especially certain nematodes, migrate through the body of the host or develop in certain tissues for days, weeks or months, and that although anthelmintics may remove all of the adult worms present at the time of treatment, these larval or agamic worms may enter the lumen of the digestive tract soon after treatment and be found there, sometimes, in the case of the horse strongyles for example, as mature worms very soon after treatment. At present the only action that can be taken in this connection is to repeat treatment at such intervals as the life history of the worms indicate as appropriate, or as the clinical condition of the animal calls for it, or as the recurrence of eggs in the feces shows the recurrence of infestation.

PERIODS DURING WHICH WORMS ARE PASSED.

The impression is quite prevalent that almost all worms passed after an anthelmintic come away in the first 24 hours after treatment. This is not the case. They commonly come away for two or three days, and bots may pass for over 17 days after treatment. It is therefore unsafe to conclude that a treatment is a failure because worms did not come away during the first day after treatment. In the treatments given in this paper there is a statement as to the length of time worms have been observed to pass after treatment wherever such information is available. It is quite probable that worms come away under some circumstances for even longer periods than those given.

EXAMINATION OF FECES FOR WORMS PASSED.

Worms embedded in a fecal mass are easily overlooked, especially by persons unfamiliar with worms. The careful veterinarian will disregard the statement of the farmer, stable hand or dog owner who assures him that no worms were passed after treatment. A glance at the feces or a casual poke with a stick or straw can not be depended on to give accurate information. The most satisfactory method of examination is to screen the feces through a screen of suitable size to retain the worms, washing as much of the fecal matter as possible through the screens, and then examining the screen. If this cannot be done, the feces should be thoroughly picked apart in a good light and carefully examined.

TREATMENTS FOR HORSE PARASITES.

Bots: Fast 18 hours. For a 1000-pound horse, carbon bisulphid in capsules; 1 dose of 22 cc. (6 fluid drams); or 2 doses of 15 cc. (4 fluid drams) each with a two-hour interval between doses; or 3 doses of 11 cc. (3 fluid drams) each with an hour interval between doses. No purgation; oil immediately following treatment especially contraindicated. Bots pass for over 17 days. Efficacy, approximately 100 per cent. Carbon tetrachlorid in 25 to 50 cc. doses is approximately 25 per cent effective in removing bots. Other drugs are ineffective.

Ascarids: The same treatment as for bots. Oil immediately following treatment contraindicated. Worms may pass for several days. Efficacy approximately 100 per cent for carbon bisulphid and apparently the same for carbon tetrachlorid.

Palisade worms (Strongylus spp.): Fast 36 hours. Oil of chenopodium, 16 to 20 cc. (4 to 5.3 fluid drams) in capsule, followed immediately by one liter (approximately one quart) of raw linseed oil or by aloes ball. Worms may pass for six days or more. Efficacy, 95 to 100 per cent.

Another treatment: Fast 36 hours. Oil of turpentine, 64 cc. (two fluid ounces), in capsule, followed immediately by a liter of raw linseed oil or aloes ball. Efficacy (ascertained on one animal only), approximately 50 per cent.

Another treatment: Carbon tetrachlorid, 25 to 50 cc. (6.5 to 13 fluid drams), in capsule. No purgation. Efficacy, 100 per cent.

Cylicostomes: The same treatment as for palisade worms. Worms pass for six to twelve days. Efficacy, approximately 100 per cent for chenopodium and oil of turpentine; variable for carbon tetrachlorid—from 100 per cent to less than 50 per cent.

Pinworms: Oil of chenopodium or turpentine as for palisade worms. Worms pass for two days. Efficacy, 100 per cent.

Stomach worms (Habronema spp.): Uncertain. It is probable that carbon bisulphid, carbon tetrachlorid, oil of chenopodium, and possibly turpentine and other drugs will kill the worms free in the lumen of the stomach, but it is difficult to obtain evidence on this subject as worms killed in the stomach are probably digested as a rule. The worms embedded in the mucosa or buried under mucus appear to be adequately protected against the action of these and other known anthelmintics. It has been found by Hodgkins that numbers of these worms may be washed out of the stomach by gastric lavage with the stomach tube. Possibly anthelmintics could be effectively administered in this way. In some cases repeated treatments by mouth or by lavage might remove all or practically all of the worms present.

Tapeworms: The presence of tapeworms in the horse is usually ascertained postmortem and practically nothing is known in regard to treatment. As the worms occur in the stomach, small intestine and large intestine, it would require critical tests, which have not yet been made, to determine the efficacy of drugs against these worms with any degree of accuracy. The indicated drugs for test are those in common use against tapeworms, such as oleoresin of male fern, kamala, etc.

TREATMENTS FOR CATTLE PARASITES

Ascarids: Treatment uncertain as we lack the findings of critical tests of anthelmintics for removing these worms. Hornby finds turpentine in doses of two to four fluid drams in a mixture of two fluid ounces of linseed and castor oils effective when this dose is given on each of two successive mornings to calves and a third dose is given a week later. A single dose of two drams is ineffective and one ounce is too toxic.

Stomach worms (Haemonchus contortus): The copper sulphate solution and the tobacco and copper sulphate solution noted below in connection with stomach worms of sheep are probably of some value in controlling stomach worms in cattle when given in appropriate doses, 100 to 300 cc., but in the absence of critical tests we cannot make very positive statements in regard to this. Carbon tetrachlorid in doses of 100 cc. to calves weighing 80 to 114 kilos (175 to 250 pounds) removed all the stomach worms, but had a toxic effect on the animals, the smaller one being dead the fourth day. Adult cattle have succumbed to doses of 22 cc., but good clinical results are reported from doses of 32 cc. (one fluid ounce) of carbon tetrachlorid in one pint of olive oil for animals weighing 700 to 800 pounds, and in doses of half this amount of carbon tetrachlorid and olive oil for yearlings. At present we have too little evidence and experience on which to make recommendations.

Hookworms: The solution of copper sulphate and tobacco discussed in connection with stomach worms in sheep has been reported as effective against hookworms in sheep and might be effective against hookworms in cattle, especially in repeated doses. Carbon tetrachlorid, in the tests on calves referred to above, removed almost half of the hookworms from one calf and 99 per cent of those present in the other, each calf having hundreds of worms. As noted, the doses given were apparently too large and this subject requires more investigation. Marek has reported satisfactory results from the use of a proprietary composed of lipoid-soluble constituents of male fern.

Nodular worms: Csontos and Pataki report good clinical results from the use of the proprietary remedy referred to above as used by Marek against hookworms. Carbon tetrachlorid, in the tests of calves referred to above removed all the nodular worms from both animals. It is not yet known what dose will maintain this efficacy and at the same time be safe for cattle; the dose given above was too large for safety.

Small trichostrongyles: Nothing is yet known in regard to the removal of these worms from cattle, but carbon tetrachlorid has been found more effective against similar worms in sheep than any other drug yet tested and might prove effective here in suitable doses.

Tapeworms: The solution of copper sulphate and tobacco discussed under the heading of stomach worms of sheep is said to be very effective against tapeworms in sheep. In doses suitable for cattle, perhaps 100 to 300 cc., this treatment might also be effective against tapeworms in cattle.

Tapeworms: Copper sulphate and tobacco solution as for stomach worms. Efficacy, usually 100 per cent. Copper sulphate solution alone will remove some tapeworms.

Sodium arsenite and copper sulphate as for stomach worms.

Treatments which have been said to be effective, but concerning which we have no evidence from critical tests are: Kamalla, one dram to lambs; kousso, two drams to lambs; koussin, two grain doses; oleoresin of male fern, one dram with two to four fluid ounces of castor oil; areca nut, freshly ground, one to three drams to lambs.

Auricular Mange of the Dog and Cat: Canker

THE parasite that causes ear mange belongs to the group Arthopodes, class Arachnides, order Acarines, family Sarcoptes and species Dermatophages. Already in 1836 Hering wrote about auricular mange of dogs, while Huber in 1860 discovered it in the cat and described it under the name of "symbioste du chat."

The parasite is found almost exclusively in the auditory conduit and on the external face of the concha. In the adult state it can be seen with the naked eye in the form of small gray mobile bodies, the male measuring from 0.38 to 0.45 mm long and 0.28 to 0.35 mm thick while the female is 0.49 to 0.56 mm long by 0.38 to 0.42 mm thick.

This chorioptes lives on the surface and does not burrow like the sarcoptes, and besides its buccal organs are not formed to prick through the skin like the psoroptes met with so frequently in the ears of rabbits. The itching produced by them is not due alone to their movements but probably to a toxic substance the parasite secretes and which is capable of irritating the fine skin of the ear. The pruritis is especially intense during the night because the patient is quiet during that time and the activity of the parasite is augmented by the heat.

It causes desquamation of the skin and a pronounced exudation, circumstances favorable for the parasite to nourish itself in the epidermic cells and probably also in the cerumen. The buccal organs are formed so as to stir up the small delicate scales and lift up small fragments into epidermic scabs.

Associated with Otitis Externa

In regards to the frequency of auricular ascariasis, Mecker observed that at the Berlin clinic, 17% of the dogs affected with otitis externa showed the presence of this parasite, and that in researches he never found the parasite in dogs not affected with this disease. He also found that the parasite sometimes causes only pruritis, the otitis being secondary Hebrant and Antoine have often observed it in the cat and Beederlich demonstrated the presence of the Dermatophages auricularis in 30% of the cats presented at the Dresden clinic during 1919-1920.

Extraneous Viability

The duration of life of the parasite outside of the body depends upon the temperature and humidity of the environment in which it is found. It lives two to three times as long in warm humid air as in air warm and dry. At the temperature of the body it is very mobile while in a higher temperature and in a dry medium it dies rapidly.

The Influence of Parasiticides

The effect of antiparasitic remedies on the parasite is varied. Volatile and odorous products, especially ethereal preparations, are the most efficacious. Biederlein is of the opinion that the impression that oleaginous substances exert a favorable medicinal action, is not well founded. He found that the mites lived five days in liquid paraffin. Henry believes that the males resist longer than the females in contact with parasiticide substances and the larvae resists longer than the adults. As regards the eggs they owe their resistance to the thick shell that covers and protects them.

In Vitro Experiments Deceptive

A good many authors have studied microscopically the acaricide properties of most all parasiticides. On this subject Jacobs has found that these experimental results are not in harmony with those observed in practice. It is likely enough that there are factors on the living skin that are capable of exerting a useful effect, as for example in the case of sulphur.

Formerly it was thought that parasites in contact with parasiticides under the microscope were dead when they became immobile.

but it was found later that immobility was not necessarily death. In fact, according to Jacob and Humans parasites that appear to be dead may soon revive when placed in a favorable medium. Jakob especially noticed that lice and fleas that were apparently dead when placed in water soon retrieved their quick movements when dried on filter paper and then re-heated.

Henry found in experimenting on mites of the horse that they could be brought into a latent state that would deceive the novice. This latent state is caused not only by the toxicity of the parasiticide but also by the surrounding temperature. The temperature of the skin is 30° to 32° C., while that in the ear is as high as 36° to 37°. At this high temperature the mites are the most active and the activity decreases proportionately with the temperature, to the extent that at 15° to 10° movements are very limited, and Henry believes that the effect of volatile agents is due more to the reduction of local temperature than upon their toxicity for the parasite. A re-heating will produce new movements that will continue until the real toxic effects begin, bringing on a new latent state that might be considered as an act of defense against the action of the drug.

To differentiate the apparent from the real death it is only necessary to place the mites in a favorable medium for a certain time, when movements will soon become apparent if the death is only apparent. It sometimes happens, however, that the parasite has been damaged to the point that its movements are very limited and that it dies later. To effect this control Henry used arachides oil at 30° to 32° C., in which parasites can live for several days and also nourish themselves as shown by the fact that small drops of oil can be found in their bodies, and that females will deposit their eggs in the oil.

Among the agents capable of rapidly killing parasites in vitro, is coal tar and its derivatives (phenol, creolin, lysol) and the etherized oils.

Veenendaal used a large number of mites taken from the ears of cats to test the parasiticide strength of drugs with the aid of the microscope at laboratory temperature during the warm month of the summer of 1921. A few of the results are tabulated as follows:

1. In oil of cedar, there were movements after three days.

3. In glycerin Idem.

4. In castor oil Idem.

5. In sulphur precipitate there were movements after 20 hours.

6. In alcohol, there were slight movements after 40 minutes.

7. In 3% creolin, there were no movements after three minutes.

10. Saponified cresol, there were no movements after 12 minutes.

11. Benzin, there were no movements after 15 minutes.

12. Hydrogen peroxid, there were very active movements after 30 minutes.

13. Coal tar, there were no movements after three hours.

14. Resorcin, there were no movements in 40 minutes.

15. Phenol, 5% there were no movements after 35 minutes.

The author found that creolin was more active than lysol and that the heated solution was more active than cold.

It is easy to discover the presence of parasites by spreading some detritis under a watch glass, heat it in the sun or incubator and then watch the mites abandon the scabs and pass to the warm glass in the form of small gray objects. Generally the females are more numerous than the males.

The affection often attacks both ears but more often only one. In serious cases the secretion is purulent and abundant and may cause ulcers in the external auditory conduit, tympanum and even provoke otitia media and interna. The ears lose their hair and bleeding ulcerous wounds appear which cicatrize slowly because of the constant scratching.

The treatment that has given the best results is a one per cent solution of carbolic acid in glycerin applied twice daily, wiping out the ear well with pledgets of felt. A three per cent solution of resorcin in alcohol is given as the best treatment of the otitis.

(Excerpt from Revue Veterinaire, Aug.-Sept., 1922)

Hunting on Sunday is prohibited in all States and Provinces east of the one hundred and fifth meridian except Illinois, Louisiana, Michigan, Texas, Wisconsin, and Quebec, and in some States certain days of the week constitute closed seasons throughout the time in which killing is permitted, and hunting is prohibited when snow is on the ground in New Jersey, Delaware, Virginia, and Maryland.

Fright Disease in Dogs

By J. E. Hodges, Maiden, N. C.

THE above term is suggested by the symptoms and is quite universally used in many sections of the South by dog breeders, handlers and the laity in general. Almost every veterinary journal copies some inquiry and most of the dog and sporting pages contain articles concerning it. While the syndrome is not always uniform, the condition that suggests the name is usually present, viz. running, barking, and frequently seeking a dark recess in which to hide and if in the field, running to his master, crouching at his feet and whining as if in fear. Some cases, especially the more advanced ones, will attack anything with which they come in contact.

Syndrome Varied

In some, the attack will begin with a convulsion and end with running, while in others the attack ends with a convulsion from which the dog emerges very nearly normal, except for a slightly bewildered appearance. In still other cases, the convulsions are entirely absent. Some run in a circle, others leave home and do not return for hours or even days. In others the attacks recur every two or three days, and in some, every hour or even oftener. Some dogs show but little change in general appearance, while in others there is rapid emaciation and loss of vitality.

Parasites and Distemper Apparently Not the Cause

A few receiving no treatment will recover, some spontaneously but generally by diminution of severity of attacks, and increase of length of intervals between the attacks. Some die under treatment, though I have lost but one case while treating dogs, not only in my territory, but in a number of other states. The principal theories advanced, attribute the etiology to intestinal parasites or effects of distemper. I have seen it in puppies never exposed to distemper and that had been successfully wormed, in adult dogs not exposed to and immunized against distemper, and in dogs that had recovered from distemper two years ago. I have posted dogs dead from the malady, and found in no case any parasites nor gross pathological lesions, save one, to which I shall refer later.

Line Breeding May Predispose

Setters and pointers seem especially subject to the disease, with collies next, though I have seen it in all breeds with which I have come in contact. I believe a highly nervous temperament, produced perhaps by too intensive line breeding, predisposes the trouble.

Not all dogs showing nervous symptoms and supposed to have "fright disease" are afflicted with it. I have recently had some communications from a veterinarian in New Jersey, regarding two highly bred dogs, belonging to one of his clients. From the history and description of these cases, I am confident that he is dealing with an active, cerebral hyperemia. I have observed a few cases like these in my own patients, where the attacks are almost invariably produced by excitement or exercise. These usually respond to thorough purging and the administration of fluid extracts of hyascyamus, canabis Indica and gelsemium.

Anal Abscess Frequently Found

In regards to the one lesion mentioned above, it is abscess of the anal glands and has been found in about 60% of my patients. Other practitioners have reported that they find it in many of their patients. Where these exist and promptly rupture and evacuate, the recovery is hastened. I have read some reports of eruptions in these cases similar to those of distemper, but the newest thing to that, which I have seen is in one patient that exhibited an intense itching over the region of the crural nerves and branches, which I passed up as a neurodermatitis and which disappears on recovery of the patient.

No Specific Treatment

I have found no specifics and have no set line of treatment for this disease, but treat it symptomatically. Rupturing the anal abscesses, the liberal use of castor oil and mineral oil, chloral, the bromides, gelsemium and lobilin sulphate have saved my patients for me. Less than 5% have shown any recurrence of the symptoms. I would like to hear from someone who has facts, not theories, that will explain the etiology.

Stanhope, Bayne-Jones described an infection in cats due to a streptococcus. This outbreak occurred in a lot of twenty-five cats. The disease was manifested by sneezing associated with a thin, greenish nasal discharge and conjunctivitis. The affected animals became prostrated and usually died in four or five days.

Sequels of Hog-Cholera Immunization

By A. T. Kinsley, Associate Editor

LOSSES of swine after immunization occur quite frequently in certain sections of the country. These losses are unfortunate because they afford an opportunity to condemn antihog-cholera serum. The skeptical attitude of some is not difficult to comprehend if the history of swine diseases and their control is carefully studied.

A method for the production of antihog-cholera serum was announced by Dorset and his associates in 1904. Although antihog-cholera serum was not produced in large quantities for several years after its discovery, it was found to be very effective in the control of the disease. It is also a fact that hog-cholera was very virulent until a few years ago and was the only swine disease thought of at that time. During the last few years there has been a variety of complications observed that occur as sequela, and hog-cholera also occurs as a complication or a sequel of other diseases. The inter-relation of hog-cholera and other swine diseases is conceded by those familiar with field conditions.

Specific Against the Filterable Virus Only

Antihog-cholera serum is a specific in neutralizing the filterable virus, but is of no value in any other disease. A few have advocated that other diseases such as necrotic enteritis and the pulmonary form of hemorrhagic septicemia were modified forms of hog-cholera and recommended the use of antihog-cholera serum and, although the losses may have been temporarily checked, the serum was not effective and after repeated trials in such cases its value even in the control of hog cholera was condemned by some swine producers.

Perplexities Enumerated

After a careful consideration, we submit the following as possible causes of immunization perplexities:

1. Swine not in condition when vaccinated and improper care after vaccination.
2. Swine in the incubation stage of disease.
3. Swine that are contaminated with gas producing microbes obtained from contaminated lots.
4. Faulty technic of administration.
5. Impotent serum.
6. A virulent virus or virus with diminished virulency.
7. Diseases that occur after the swine are immunized and probably have no relation to the immunization.

The foregoing factors are not arranged in the order of frequency of occurrence.

The successful practitioner is one that makes a careful examination of every herd of swine prior to vaccination, in order that he may know the exact condition of the swine at the time that serum and virus are given. He who does not make such an examination cannot know the condition of the herd and difficulties are likely to follow.

Preparatory Conditioning

1. The condition of swine at the time of treatment is a very important factor in the results of immunization. The reaction following the injection of serum and virus in hogs that are properly prepared is usually very slight and frequently is unnoticed. If swine are not properly prepared for the reaction, the losses from digestive derangement may be great.

Swine are properly prepared for immunization by diminishing the feed for three or four days and withholding all feed for twenty-four hours before administration. The best results are obtained by feeding slop during the preparatory period. Swine should receive a very limited ration for several days after immunization and it should consist of slops, skimmilk, semi-solid buttermilk or other like products. It is very probable that the extraordinary losses that occur in stock pigs are due to heavy feeding immediately after immunization.

Sixty percent of one lot of shotes that were apparently healthy at the time of immunization, died within ten days and on investigation it was found that they had been kept in a dry lot on rather a meager ration and after the treatment were immediately turned into a corn field. Digestive disturbances resulted as a consequence of gorging, and heavy losses occurred.

Incubation Stage Sometimes a Hazard

2. An apparently healthy herd may be found to be diseased when the history is ascertained and a careful examination is made. Some of the most extensive losses have occurred in apparently healthy swine that were given antihog-cholera serum and virus on the supposition that they were free from disease. The importance of determining the exact condition of swine

prior to the use of antihog-cholera serum and virus is illustrated by the following mentioned events:

A Missouri practitioner was called to immunize one hundred, sixty-pound shotes, apparently healthy. He was familiar with the surroundings and assumed that there was no hog cholera or other disease of any importance on the premises and assured the owner that there would be no serious effects. On the tenth day, ten shotes were dead and several others off their feed. On examining several of the dead ones, the usual lesions caused by the filterable virus were found, viz: congestion and hemorrhages of various lymph glands, petechial hemorrhages in the lungs, kidney, mucosa of the larynx and bladder. In addition to the above, there were extensive lesions of necrotic enteritis consisting of ulcers and an adherent exudate on the intestinal mucosa. Formerly, such findings would be considered positive evidence of a cholera break. Fortunately, the practitioner in this case had treated two other herds in the same community with serum and virus of the same serial number that remained in good condition.

There is no question but that the loss of these hogs was in part due to the activity of the filterable virus and that the practitioner was at fault for not having discovered the necrotic enteritis before injecting them. It is a well known fact that swine affected with necrotic enteritis should not be given hog-cholera virus.

Hog-cholera in the incubation stage may not be recognized unless a careful examination is made and considerable time is devoted to actual inspection of the herd and study of its history. Great losses may occur from the use of serum and virus during the incubation stage of cholera. In one instance, some sixty swine weighing about 100 pounds were given the simultaneous treatment and two days after, fifteen of them were dead and nearly all of the others showed marked evidence of illness. A careful investigation of this particular herd revealed that the swine were actually sick at the time of treatment. It is not possible to produce hog-cholera in less than five or six days by the use of virus and in those instances in which cholera develops within three days after treatment it is positive that the hogs were previously affected.

Filth Born Conditions

3. Losses are frequently reported in which there are several deaths from 24 to 48 hours after the administration of serum and virus, and in which there is more or less gaseous swelling at the point of injection. The following illustrates this condition and is a report based upon an investigation of four different outbreaks within a period of eight weeks in two different states in 1920, by Dr. J. D. Thrower. The history and outbreak in each of the four herds investigated were about the same:

"Within 48 to 72 hours after vaccination, the practitioner would report the loss of several hogs, with 50%, or more, of the herd showing lameness and general indisposition. Upon arrival on the premises a diligent search for evidences of hog-cholera or other associated infectious swine diseases was without avail. The only note-worthy pathological condition observed was a gaseous tumefaction at the site of infection.

"The hogs being apparently well at the time of vaccination, it naturally seemed to both the veterinarian and the farmer that the serum or virus was at fault, since the enlargements were found only at the site of injection.

"Being confronted with these conditions, it was decided to determine, if possible, the source of anaerobic pathogenic organisms that seemed to be responsible. Several specimens of the diseased tissue were placed in sterile fruit jars and taken to a laboratory. The laboratory findings revealed that suspensions from the tissue produced death in guinea pigs in less than 36 hours, and inoculations in Smith tubes developed an abundance of gas. The anaerobic organisms were recovered from the cultures and were injected into guinea pigs, followed by death in less than thirty hours.

"A bottle of serum of the same serial as that used for vaccinating the hogs, was secured from the veterinarian and subjected to the same laboratory procedure as was resorted to with the tissue specimens, without the recovery of any anaerobic organisms, and appeared to be perfectly innocuous when tested on guinea pigs. This seemed to vindicate the serum, but did not establish the source of the infection.

"A request was then made upon the practicing veterinarians to furnish the laboratory with skin scrapings from the axillary space and the inner surfaces of the thigh of hogs in the infected herds. The desquamated epithelial and skin debris thus acquired was placed in sterile containers and upon receipt at the laboratory, guinea pigs were injected with a suspension, with death resulting in less than thirty hours. Smith tube inoculations with the same cultural and morphological characteristics as the anae-

robe recovered from the diseased tissue of swine that had died in this herd, were recovered.

"The causative agent in such cases may be a member of the Vibrion septique group, the Bacterium Welchii, or the Bacillus aerogenes capsulatus.

"It would seem that these facts would justify the conclusion that the causative agent in these outbreaks was on the skin of the hogs at the time of vaccination, and were probably carried in by the needle point at the time it was inserted.

"It is very questionable if the veterinary profession has at its disposal any efficient skin antiseptic that will destroy these organisms, because all of the anaerobes referred to in this connection are sporulating and consequently highly resistant.

"The unused portion of the serum used in each of the four herds in question was returned to the respective laboratories from which they came, with the suggestion that they be used in immunizing in order that the results obtained might be carefully observed. This was done in each instance with results entirely satisfactory, as all of the pigs lived in each case."

Faulty Technic

4. Most practitioners have developed an efficient technic for the administering of antihog-cholera serum and virus; however, an occasional instance arises in which untoward sequels can be traced to faulty technic. The report of one such instance will illustrate this point:

A practitioner had been called upon to immunize a small herd of swine in the fall of 1917. He had been busily engaged immunizing cattle, horses and mules against anthrax with serum and spore vaccine. He did not sterilize the syringe that he had used in administering the anthrax spore vaccine before using it as a virus syringe. It was fortunate that only a small herd of swine were so treated as there was a one hundred per cent loss. In another instance, a practitioner had used his virus syringe needle to tap an edematous swelling on a mule and without sterilizing the needle proceeded to immunize 8 pure-bred gilts, all of them developing malignant edema at the site of injection.

Impotent Serum

5. With the present regulations for the production of antihog-cholera serum, there is little chance for any licensed serum establishment to market an impotent serum. If a virulent virus is used in conjunction with an impotent serum, cholera will develop in seven to ten days.

A Virulent Virus

6. It is possible that a virus may become attenuated, particularly during the hot summer months when subjected to a high temperature for several days in transit or before it is used. A weak or a virulent virus when used in simultaneous immunization fails to produce a reaction and the swine so treated acquire a passive immunity from the action of the serum.

Generally speaking, antihog-cholera serum and virus is much more constant in potency and virulency and therefore more dependable than the condition existing in swine when immunized.

Conditions Not Related to Cholera

7. Most any condition may occur in immune swine other than hog cholera and unfortunately when these conditions do occur they are sometimes diagnosed as hog-cholera breaks. It is not at all unusual to find swine immune to cholera, affected with hemorrhagic septicemia, necrotic enteritis, flu, swine erysipelas or with various parasites. Such conditions can usually be readily distinguished from hog-cholera and should not be reported as hog cholera breaks. Fortunately, the majority of practitioners, some state and bureau men, now recognize the fact that there are some other diseases affecting swine besides hog-cholera. It is difficult to make a specific diagnosis of swine diseases.

A Word on Diagnosis

The following is a brief general statement of symptoms and lesions of the most important diseases of swine.

Hog Cholera

Usually only a small percentage of the herd is affected at the beginning of an outbreak; a high temperature, inappetence and a tendency to hide in bedding are symptoms indicating hog-cholera. Autopsy reveals congested and hemorrhagic lymph glands, petechial hemorrhages of lung, kidney, bladder and epiglottis.

Flu

High temperature, inappetence, tendency to remain in bedding, thumping, coughing, and a large portion of the herd simultaneously affected are the usual symptoms of influenza. An acute inflammation of the anterior respiratory tract typifies this affection.

Necrotic Enteritis

Appetite fair to good, diarrhea, unthriftiness, emaciation and temperature 104-106° F., are the usual indications of infectious necrotic enter-

itis. Enteritis of varying intensity is the lesion that characterizes this disease.

Hemorrhagic Septicemia

Cough, nasal and ocular discharge, thumping, appetite fair and temperature up to 105° F., typifies the pulmonary form of hemorrhagic septicemia. A typical catarrhal pneumonia, with or without pleurisy, are the lesions that characterize this disease.

Swine Erysipelas

Diminished appetite, dullness, temperature 104 to 106° F., may or may not show locomotory disturbance; sloughing of tail or portion of ears. Autopsy findings reveal very large spleen, tumefied, edematous lymph glands that may or may not show necrosis.

Swine Erysipelas

The following case report will probably be of considerable interest, particularly to practitioners in the section of the country where difficulties are encountered in the diagnosis of swine diseases.

History

One hundred sixty-five spring pigs were farrowed on the farm in question and were given better than the usual surroundings and care. These pigs were all immunized against cholera about ten days before they were weaned. This was on or about the first of July. Each pig received not less than two or two and one-half cubic centimeters of virus and from 30 to 40 of serum. The immunization was done by a veterinarian. About the middle of August, the owner reported that two or three pigs which then weighed about 125 pounds, were not eating as they should. From the middle of August to about the 10th of October, 14 of the above hogs died and three or four others that were affected with the disease, recovered.

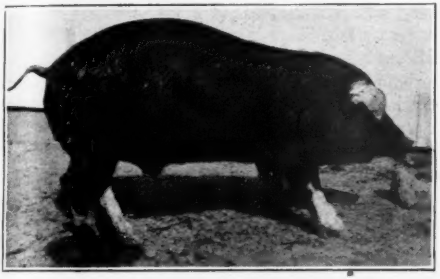


Fig. 1. A barrow that was showing the disease in which the tail was involved. The tail in this particular instance was stiff and showed a line of demarcation near the body where it would soon slough. There also is a slough in the right ear.

Symptoms

The first evidence of disease consisted of a diminished appetite, dullness and depression. These conditions became more intensive and on the second or third day the affected swine refused all food and water and persisted in assuming the decubital position. They evidenced a temperature of from 104 to 106° and some of them showed some disturbances of locomotion. In the cases that recovered, the tail and portions of the ears had sloughed. One particular barrow showed marked involvement of the joints and locomotory disturbances.

In one case there was a discharge from the eyes and in all of the cases there was a slight discharge from the nose. Most of the affected pigs thumped but not excessively. Most of the pigs that became diseased, died on the third or fourth day.

Autopsy Findings

Several of these pigs had been autopsied by the local veterinarian and some of them had been autopsied by other veterinarians that had been called in. Excepting one pig that showed general lesions that are usually attributed to cholera, the outstanding change consisted of a very marked enlargement of the spleen, tumefaction, edema, and a tendency to necrosis of various lymph glands, sloughing of the tail and portion of the ears.

Fig. 2. A case in which the joints particularly of the left front leg are involved although the joints of the legs in this animal were more or less enlarged.

Diagnosis

After a careful consideration of the history, symptoms and autopsy findings, a diagnosis of swine erysipelas was made.

IMPACTION IN SWINE

IMPACTION is not at all uncommon in one or two swine that are maintained in suburbs, but the occurrence of impaction in herds of swine maintained in the country is rather unusual. The following occurred in the practice of Dr. S. L. Stewart of Olathe, Kans.

History

The condition occurred in a herd of 60 shotes, weighing from 125 to 150 pounds. The swine in question were raised on the farm and were running on a blue grass pasture. The condition mentioned occurred in August after three or four extremely hot days.

Symptoms

The first symptom noted by the owner was a general dullness and depression in the swine. This symptom was interpreted by the owner as an indication of hog cholera and he at once called Doctor Stewart, asking that he come prepared to immunize his hogs which he believed were affected with cholera. Upon carefully inspecting the swine in question, it was found that there was a general dullness and depression, the animals refused to eat, and would frequently lie down and would evidence colicky pains by kicking their belly. Some few of them would crawl upon the ground. There had been four or five deaths before the investigation was made. The animals usually died within 48 hours after the first symptom.

Autopsy Findings

After a careful autopsy of two or three cases, the only evidence of disease found, consisted of a marked impaction of the large intestine, with dry blue grass. All other organs were normal and there was no evidence whatsoever of hog cholera.

Diagnosis

Based upon the symptoms and autopsy findings, a diagnosis of impaction was made.

Treatment

All the remaining swine were placed in a dry lot and all feed and water withheld for twelve hours. Troughs and small quantities of soaked, chopped feed, in which there was incorporated one ounce of bovine purgative per pig, were prepared, the pigs were then permitted to consume the feed, after which they were left in a dry lot so the results could be observed. This line of treatment produced the desired results and all animals recovered.

Comment

The occasion for the impaction was due to the fact that the blue grass had been rather luxuriant and green, and the extremely hot weather had caused a sudden drying of the grass and this grass had been consumed in considerable quantity by the pigs. The method employed in this herd deserves special mention. Many practitioners have, in the past, administered anti-hog cholera serum and virus, without first making a positive diagnosis, and had this line of treatment been followed in the herd in question, no doubt, there would have been an excessive loss.

The usual digestive disorders in swine incident to the feeding of new corn have been relatively common during the present season. These difficulties can be avoided by judicious feeding.

Peanut meat, made by crushing peanuts after the hulls have been removed, contains from 45 to 49 per cent of protein. It is an excellent feed when combined properly with other feeds.

The rate of growth of gilts is increased during gestation, however, suckling a large litter of pigs will inhibit the growth and development of young sows.

Soy-beans planted with corn makes a splendid combination after pasturing pigs or sheep. The soy-bean is highly nitrogenous and serves to balance the ration. The corn and soy-beans are most economically harvested by the swine or sheep.

Some swine breeders believe that flushing sows at breeding time will increase the number of pigs per litter. So far as we know, this procedure has not been tested sufficiently to recommend, and it is suggested that veterinarians select a few good breeders in his community and have each breeder keep complete records and report the results to VETERINARY MEDICINE.

Some investigators in some of the southern states report that abortion is rather common in sows that hog down corn and velvet beans. It has been found that corn is eaten first and usually during the early stage of pregnancy and that the velvet beans are consumed later. The beans are exceedingly rich in protein and may be an important factor in the occurrence of abortion.

The Swine Situation

THERE has been a material increase in the number of swine during the last year and, according to reports, the number of swine in the United States is over sixty million.

From the present indications, the 1922 fall pig crop will be in excess of the normal and unless there are unusual losses this will still further increase the number of swine produced during the year. The weather conditions throughout the Corn Belt have been favorable for the fall farrowing and unless something unforeseen develops it would seem that the losses of pigs may, by proper precaution, be reduced to a minimum.

Losses Grouped

The veterinarian has been serving his clients admirably under the existing circumstances but he has been bewildered by statements that have been made from supposed authorities on swine diseases. Certain fundamental facts regarding swine diseases are acceptable and an understanding of them we believe forms the foundation for the control of swine diseases. The veterinarian is interested and concerned in the welfare of his clients and by proper cooperation the 1922 swine crop can be marketed with a limited loss. The losses of swine have been grouped into two periods, as follows: First, the losses occurring from the time of farrowing until the pigs are three weeks of age. Second, the losses that occur after the three week period. This grouping is arbitrary and has been used only for convenience.

Losses of Pigs

The principal causes of the loss of pigs from the time of farrowing until the pigs are three weeks of age are: abortion, dietary disorders, animal parasites, swine plague and hog cholera.

Abortion

Abortion in swine is not as prevalent now as it was in 1919 and 1920; although it still exists and is quite destructive in some sections of the country. From the investigations of abortion disease in swine, it would appear as though there was no specific cause for the trouble. A variety of micro-organisms such as the B.abortus, suipestifer, suisepticus, colon bacillus, pyogenic cocci and others, have been identified with this disease.

Some veterinarians have reported the apparent successful control of abortion disease in swine by immunization of sows at breeding time, or soon thereafter, with a bacterin made from a variety of micro-organisms that have been found associated with this disease.

Dietary Disorders

One of the principal destructive diseases of swine during the first ten days after farrowing, is directly traceable to an erroneous diet of the sow. It has been stated and apparently proven, that sows should be so fed that pigs will not gain in weight for the first ten days after farrowing. Such a ration would consist of not more than one-half of the regular food allowance and it should be of the proper character. It is not advisable to use fermented foods or fat producing foods during this particular time. Scour is the most common disorder of little pigs and is usually of dietary origin, although it may be caused by bacterial infection or parasitic invasion.

Dietary scour in pigs, although of dietary origin soon becomes complicated with bacterial infections at which time the disease is much more fatal. Proper feeding of the sow and the provision of sanitary quarters will largely prevent the losses caused by scour. In accordance with well established principles, it is probable that suckling pigs can be immunized against the effects of bacteria that are usually associated with pig scour. Thus, proper feeding and sanitation, combined with immunization, has according to reports of many practitioners reduced the losses due to pig scour, to a minimum.

Parasitic Diseases

The losses of pigs due to animal parasites are much larger than is usually expected. It is generally believed by investigators that at least ten per cent of the pig crop each year is destroyed by animal parasites. Pulmonary ascaridiasis has been quite prevalent and has been responsible for the majority of losses of pigs, due to animal parasites. This condition is caused by the larval form of the ascarid which invades the lung and produces an embolic, or bronchial pneumonia. The extent of the disease in the animal affected depends upon the number of larva invading the lung. The source of infestation is variable but in general it may be said that the ova or embryo of the ascarid occurs wherever the fecal discharges of swine affected with intestinal ascaridasis are found.

The symptoms manifested in pigs affected

with pulmonary ascaridasis consists of unthriftiness, staring coat, rapid breathing, thumps, and as the disease progresses there will be inappetence and probably diarrhea. The clinical symptoms are not sufficiently distinctive upon which a positive diagnosis can be made; however, the history is of value because this condition will be found more or less prevalent in pigs farrowed by sows that are infested with the adult ascarid, also, in pigs that have access to hog lots that have not been kept in a sanitary condition and particularly if the lots have been used for swine for several successive years.

The lesions found in pigs dead of pulmonary ascaridiasis consist of embolic pneumonia or small bronchial pneumonic centers in various parts of the lung. The related lymph glands are usually practically normal, unless there is an infection with the bipolar organism in which case the bronchial mediastinal glands will be more or less tumefied, edematous, hyperemic and perhaps hemorrhagic.

Ascaridiasis in pigs is easily and effectively prevented by elimination of the intestinal ascarid from the sows, after which they are thoroughly scrubbed, dipped and placed on ground or in lots that have not been previously occupied by swine. This should be done prior to the time of farrowing. The farrowing lot should be so arranged that the young pigs can not gain access to lots and pastures that have been previously occupied by swine. Such isolation should be continued until the pigs are four to six weeks of age, after which time there is little danger of destruction by ascarids.

The treatment of pigs affected with pulmonary ascaridiasis is not very successful. However, we have observed one litter of pigs that were said to be affected with pulmonary ascaridiasis and they were successfully treated. The treatment in this case consisted of inhalation medication in which eucalyptol oil was the medicament. The pigs were confined in a crate for this treatment and were required to inhale the medicated vapors for about fifteen minutes, the treatment being repeated once daily for three days. The vapor medication increased the fluidity of the bronchial secretion, and thus facilitated the discharge of the parasites. This method of treatment can be applied to a large number of swine if they are placed in a reasonably air-tight hog house.

Swine Plague

Swine plague is a disease that must not be overlooked. This disease also known as hemorrhagic septicemia has been discussed in several publications recently and it would hardly seem necessary to again give a detailed description at this time. It might be stated that hemorrhagic septicemia in swine may occur as a septicemic disease, manifested by a high temperature, rapid course, and a varying fatality; pulmonary infection manifested by cough, thumps, difficult breathing, variable temperature depending upon the extent of lung involvement and a varying fatality; other forms of the disease may also occur but the septicemic and pulmonary types are most common and are usually not difficult to identify when the history, symptoms and lesions are carefully considered.

The lesions of the septicemic type of hemorrhagic septicemia consist of petechial hemorrhages beneath the serous and mucous membranes; with or without an enlarged spleen; tumefaction and hemorrhages of the lymph glands, and in some cases discoloration of the skin. The pulmonary form of hemorrhagic septicemia is manifested by an atypical pneumonia in which there is a marked interstitial infiltration. There may or may not be pleurisy. The related lymph glands will be tumefied, edematous, hyperemic and hemorrhagic.

Swine plague or hemorrhagic septicemia in swine can be quite largely prevented by proper immunization with a bacterin prepared from the B.suisepticus. According to reports of some practitioners, this bacterin is also valuable as a curative agent.

Hog cholera is the exception rather than the rule in pigs less than a month of age. A detailed description of this disease is not considered necessary, suffice at this time to say that should hog cholera be identified in suckling pigs it is advisable to administer relatively large doses of serum and virus, and with the distinct understanding that the immunity so produced may be of relatively short duration, and in order to positively protect against a recurrence of hog cholera, such pigs should be re-immunized with serum and virus soon after weaning.

Losses of Shotes and Mature Swine

The losses of swine after they are three weeks of age and until maturity, are due to hog cholera, swine plague, infectious necrotic enteritis, swine erysipelas and "flu."

HOG CHOLERA

Hog cholera is probably the most important disease of swine for it is responsible for the principal losses in shotes and mature hogs. The identification of hog cholera is based upon the history of the outbreak, symptoms of the affected animals and the postmortem findings of swine that are dead. In such cases, the history, if accurately obtained, reveals the source of infection, a period of incubation of from five to seven days and in involvement of a considerable of the herd of swine at the onset. The symptoms manifested in swine affected with cholera, vary in accordance with the virulency of the virus, the resistance of the infected swine and the complications. Generally speaking, cholera hogs evidence a high temperature and inappetence with a tendency to hide in their beds. The course of the disease is relatively rapid, the animal usually succumbs in from a few hours to thirty-six hours after the first symptoms are manifested.

The lesions usually attributed to hog cholera consist of tumefied, congested, hemorrhagic lymph glands, petechial hemorrhages, particularly beneath the visceral pleura, and beneath the mucosa of the bladder and epiglottis. The kidney may or may not be petechiated, the skin may or may not be discolored; the bone marrow may have a changed aspect. These lesions when associated with the symptoms above described and verified by history usually suffice to make a correct diagnosis of hog cholera. The use of serum and virus is common knowledge of practically all veterinarians and needs no further discussion at this time.

It might be advisable to state that virus should not be used in swine in which hog cholera is complicated with infectious necrotic enteritis.

SWINE PLAGUE

Swine plague outbreaks, particularly in shotes and mature hogs, may or may not have an apparent source of infection. The period of incubation is variable, usually a relatively small portion of the herd becoming affected at the beginning. The septicemic type of this disease runs a rather rapid course and the percentage of fatalities is less than in cholera. The description of swine plague as applied to the three weeks old pigs is usually applicable to shotes and mature swine.

NECROTIC ENTERITIS

Infectious necrotic enteritis is a condition characterized by digestive derangements and an associated enteritis. The intensity of this disease varies probably in a direct ratio with the intensity of the inflammation. This disease spreads in a herd less rapidly than either cholera or swine plague, and is usually of a subacute or chronic character. The principal symptom is a diarrhea which is persistent. The affected animal soon becomes gaunt and emaciates rapidly. In some herds the disease is extensively fatal while in other herds there is a small per cent of fatalities.

This disease can usually be readily diagnosed by the fact that it has rather a slow onset, spreads relatively slow in a herd, the pronounced symptom is diarrhea and the lesions consist of an enteritis in which there is an adherent exudate.

SWINE ERYSIPELAS

Swine erysipelas is probably rather wide spread. Swine erysipelas is a bacterial disease and is manifested by discolored areas on the skin, and in the acute form there is a high temperature and general depression. The lesions consist of discolored skin, tumefied and engorged spleen, and vegetation on the cardiac valves.

FLU

"Flu" is apparently a specific infectious disease of swine, although the causative agent has not yet been identified. This disease affects shotes and mature swine. It is manifested by a sudden onset, high temperature and a tendency for the affected swine to hide in their beds. One striking feature concerning this disease is the large percentage of animals that become affected at once. It is not uncommon to observe from fifty to ninety per cent of a herd simultaneously affected. This tends to distinguish "Flu" from hog cholera. The pulmonary involvement in hog "Flu" is a further means of identification of different diseases. The lesions of this disease are not well marked and consist primarily of an inflammatory disturbance of the anterior respiratory tract. No specific treatment has been found that is of value in the control of this disease. The large percentage of affected animals recover and the serious economical loss of this disease is due to the extensive and rapid emaciation.

By a careful survey of the diseases of swine, most veterinarians find that they can now identify the principal fatal diseases and, no doubt, can control the same. A little more detailed study will give further insight to the various diseases of swine and will materially increase the encouragement of the producer.

Powdery Mildew of Clover

By Professor M. H. Pammel, Ames, Iowa.

OUR second crop of clover is badly mildewed. Will there be any danger to stock if we cut it for hay? Will there be any danger if we pasture it? This is something new here and our field is very bad.—W. K. C., Iowa.

There are reports in this territory of mildew on clover. No doubt you are familiar with this mildew and have received reports from elsewhere concerning the same. Will you please inform us as to whether or not any bad effects may come from pasturing it, or whether or not there would be any bad effects from feeding the hay from it?—E. H. McC., Iowa.

This mildew on clover has been usually abundant in Northern United States this year. It truly occurs in an epidemic form and has been quite destructive to red clover. I have observed it this year in many districts of Iowa, South Dakota and Wisconsin.

The amount of red clover infected varies greatly but in every case there was more or less damage and in many cases I was asked whether it was injurious to stock. There can be no doubt that the mildewed clover forage is of an inferior quality, but whether it was injurious to live stock I could not learn. A case was reported to me from the Lake Superior country where the man stated he thought it was injurious. It is certainly not poisonous as the term is understood in veterinary practice.

I looked up this matter when I wrote my Manual of Poisonous Plants and found that some European veterinarians ascribed to this powdery mildew a form of stomatitis and I therefore gave a place to the fungus in the work. It is certain that rust on clover sometimes produces a form of stomatitis.

Roberts and Bitting describe this disease as follows, but which they attribute to moulds. The mildew, however, is not a mould. They may have been indefinite in regard to the use of the term mould. The disease described may have no relation to this mouldy forage.

In regard to stomatitis of cattle, which they attribute to moulds, the peculiar organism causing the disease, if there be one, has not been described. It seems probable that the disease is due to more than one form of fungi which may be present on the pasture. The animals affected are cattle of all ages above 4 months. The disease is not contagious but usually affects a number of animals in a given herd, and always while in the pasture. The fact of a number of animals being affected is due to similar exposure and not to infection spreading from one animal to another. Attempts at direct inoculation have not been successful. The disease occurs in some localities every year, and in others seemingly under special climatic influences. I know a locality where it may be developed at any time by permitting cattle to graze along the roadside. The disease is much more prevalent on permanent blue grass than upon timothy pasture, and is of rare occurrence upon pastures used in a crop rotation. The disease develops in pastures allowed to grow for some little time without being used. It is particularly liable to develop a few days after a good rainfall succeeding a dry period.

The symptoms are: inability to graze, saliva dribbling from the mouth, and frequent visitations to the watering trough, holding the mouth in the water as though it were burned. The animal appears to be hungry but cannot eat. The mouth is red, and lips, gums and tongue swell. Blisters form and these soon give way to ulcers that may remain distinct or run together. In some of the aggravated forms the ulcers may unite so that when the crust comes off, it will make a cast of a lip or the whole of the tongue. The crusts are usually from the size of a dime to that of a quarter. The tongue may swell to such an extent as to protrude from the mouth and the animal be unable to draw it inside. The muzzle may be increased one-half in size.

I may say in conclusion that there is nothing positive up to date as to the injuriousness of this powdery clover mildew. A number of experiments are being conducted by several investigators.

Comment: Both the Ohio and the Tennessee experiment stations have made experiments on the toxicity of red clover mildew and have pronounced it harmless. At the Ohio station it was proved to be harmless to the most sensitive laboratory animals and at the Tennessee station it was fed to large animals for two weeks without ill effects.—Ed.

Bovine Indigestion

By John F. DeVine, Associate Editor.

I meet with a good many cases of indigestion among my bovine patients and confess that I have rather poor success in treating them. Some are of the gaseous type and others take the form of impaction of the rumen. I have had fatal results in several cases after the administration of a proprietary remedy containing barium chlorid and strychnin and am wondering if it is not possible that this combination is responsible. Will you please advise me and outline a proper course of treatment?—H. J., Que.

Reply by Dr. Devine: It is, of course, needless to explain to a practitioner the absurdity of attempting to prescribe specifically for a case or ailment so varied as are the different types of indigestion. For instance, how differently we would treat a case of proteid poisoning in a cow that is being forced for an official record and receiving an excessive amount of oil meal to a case where a cow had followed the threshers to a straw stack. Even to those who are not familiar with cattle practice, it must be apparent at once that the former animal is in great danger of prostration, even often before diarrhea sets in and that stimualtion of the proper kind is quite imperative. I wonder if our older equine practitioners would be offended at a word of warning. I have seen them in the presence of such cases, think at once of strychnin as they naturally would if they were treating the horse instead of the bovine, and the unfortunate part of it is that these men in the past were rarely or possibly never called to treat the big herds. It is the family cow, in the back-yard with the wife and all the little ones looking on with anxiety and after the dose of strychnin has been given the cattle practitioner knows the answer, which is often too pathetic for words. The wife and children from that moment lose respect for the hypodermic syringe.

Stimulation Comes First

If I were asked what I considered the most important factor in treating a case of indigestion in the cow, I think my reply would be, "Stimulation," leaving catharsis or rumenotomy for second thought. In cases of impaction, we use barium chlorid and tartar emetic as a rumen stimulant, but I fear we do not use it as often or think it so specific as many do. I mean by that, that we do not think of relying upon it solely. I know of no better way to tell you how to treat these cases than to outline what we do.

Oils, Nux Vomica, Antiferments

In all forms of indigestion that are accompanied with diarrhea, we immediately administer oil—one to two quarts, depending on the age and size of the animal. We then stimulate with large doses of nux vomica, which we believe is much preferable and safer than strychnin. We give from 2 to 4 drams of fluid extract, depending upon the size of the cow and the amount of depression. We repeat this in anywhere from two to four hours, depending upon the individual case. Where it is practical, we will always use in conjunction with the nux vomica, an alcoholic preparation, either grain alcohol or any form of alcohol that is obtainable.

Veterinarians in this country are allowed from 7 to 40 quarts of alcohol per year, depending upon the form of permit secured. While expensive, still we do not hesitate in our practice to use alcohol on valuable animals. When it is not obtainable we use aromatic spirits of ammonia or ammonia carbonate. We always add to the oil some antiferment such as coal tar derivatives or formaldehyd. If the cases are watched and stimulation pushed, many of them respond, even though they are prostrate and remain so for a day or two.

Large Saline Doses Dangerous

As to the cases of indigestion that are accompanied by constipation of the intestinal tract or impaction and atony of the rumen, if we do not consider the case operable or advisable, we then give a mild cathartic. This statement —"a mild cathartic"—is used advisedly. Large doses of saline are positively dangerous to the bovine. For the ordinary sized cow, our cathartic contains 10 oz. of magnesium sulphate, 4 oz. sodium chlorid, 2 drams powdered nux vomica and 2 oz. ginger. This is followed in two hours by a dose of stimulant the same as outlined above and a tablet of barium chlorid and tartar emetic. The stimulant and a tablet is repeated every two or three hours. The cattle cathartic is repeated about every eight to twelve hours as often as indicated.

Cathartics Help Impactions

We still use the cattle cathartic even though

we believe the trouble lies largely in the rumen, because extensive experience has proven to us that it is the better way. We resort to mild catharsis and considerable stimulation because, again, we are thoroughly convinced that stimulating the digestive tract rather than shocking it is the desirable thing to do. We always include sodium chlorid in our cathartics for its anti-ferment action and the fact that it encourages animals to drink as soon as they eat or drink the least bit, regurgitation and peristalsis usually follow promptly.

Turn Them Out

Years of observation has also so convinced me of a bit of knowledge which, while simple, is often of much advantage and that is that after the animal has had from twelve to twenty-four hours treatment as outlined above, during the season of the year when it is feasible, the weather permitting, recovery will be positively hastened if the animal can be turned in the open into a paddock or field. She may stand listlessly for a long time, but sooner or later she is apt to be attracted by some tempting morsel and browse a bit and from that moment in most cases, indications of recovery are observable.

Feed Cautiously

We then are particularly cautious about the animal's feed and water. Guard her from getting quantities of cold water and any food that is not laxative. Her convalescent treatment usually consists in giving something that will stimulate the digestive tract and keep down fermentation.

A Simple Condiment and Stimulant

A simple preparation that we have found practical and convenient is one containing hyposulphite of soda, ginger, nux vomica, fenugreek and anise seed, given in a drench three times daily. As convalescence advances it will be taken in the feed as the anise is tempting.

Stomachs Not Always the Seat of Trouble.

I think it is generally understood that with cattle their digestive troubles are more frequently located in the stomachs than in the intestines. In other words, the digestive troubles of the ox may be spoken of as reverse to those of the horse. Nevertheless, some have gone too far in ignoring the intestinal tract.

When to Operate

As to the case that should be operated on, here again, the skill and experience of the surgeon will be the determining factor. Where there is extreme fermentation of a fermenting semi-fluid mass, it is safe to say that in the majority of cases some of the contents should be removed by rumenotomy; medication is too uncertain. This is equally true where the rumen is packed full with dry, coarse roughage, such as straw.

Rumenotomy Not a Serious Operation

Rumenotomy is in no sense a formidable operation. Any veterinarian who is even slightly acquainted with surgery can perform it successfully if reasonable precaution is taken in cleanliness and avoiding any of the irritant matter falling down into the peritoneal cavity, provided that the operation is attempted and carried out while the animal is still strong. As a make-shift or the last resort it is bad practice. This operation has been repeatedly described in this Journal and, of course, the technic is laid down in all modern surgical text-books.

Instill Antiferments Direct

Tympany of the rumen is, of course, best relieved through the canula. This is equally true where putrefaction and fermentation are excessive. Anti-ferments, such as formaldehyd, should be injected directly into the rumen through a canula. Formaldehyd may be used in the proportion of one tablespoonful to the quart. We not infrequently inject as much as a gallon of creolin solution, using two ounces to the gallon. Thorough massaging of the rumen through the left flank sometimes seems to be surprisingly effective in exciting activity of the rumen, considering how imperfectly massaging can be applied.

Cows that freshen in the fall produce more milk and butterfat than when they freshen in any other season.

Since the milk-for-Health campaign was begun in Cleveland, Ohio, about one year ago, there has been a 20 per cent increased consumption of milk.

The Kansas Experiment Station has been investigating the quantity of salt consumed by cattle while on pasture. According to the report, the consumption in pounds per animal was: 2.83 for July; 1.8 for August; 1.17 for September and 1.24 for October. The cattle preferred granulated rock salt and block evaporated salt to the harder block salt produced by pressure.

CESAREAN SECTION IN A COW

I was recently called in consultation to help deliver a cow. It was a Jersey, weighing about 1000 pounds. The four legs were out and head was turned back on the right side. Failing to effect a delivery, I suggested an operation as the only chance. We used chloral hydrate as the anesthetic and after making an incision, we lifted the fetus out just as it lay.

This cow was supposed to have freshened some time in May, but failed to come in at proper time. The fetus was dead and had been dead for thirty days or more. It was the largest calf I had ever delivered, measuring forty inches high and six feet and eight inches long, from tip of the nose to the end of the tail. I believe it weighed over two hundred pounds. The cow made a nice recovery.—W. O. G., W. Va.

MALTA FEVER AND ABORTION DISEASE

Some cases of malta fever in humans in Rhodesia (Africa) have been investigated in which the possibility of infection from goat's milk has been eliminated. Investigators have called attention to the fact that there is a close similarity of the B. Meletensis, the causative factor of malta fever, and B. abortus Bang, the cause of abortion disease in cattle. Circumstantial evidence incriminates cows affected with abortion disease in the Rhodesian malta fever cases. However, further investigations are necessary before it can be stated that B. abortus Bang is the cause of malta fever. It would seem as though there should be many cases of malta fever in practically every section of the country because abortion disease is widespread and the B. abortus Bang is of common occurrence in cows' milk.

GROWTH PERIODS IN A COW

Ragsdale & Brady by a series of ingenious experiments and calculations have determined that dairy cows have three distinct growth periods. The first period of maximum growth rate occurs at the fifth month of age the record and the twentieth month, the age at which the third period occurs, has not been positively determined but occurs during the gestation period. If these findings are proven correct for each breed it will not be difficult to produce a maximum development of dairy cows and it would appear as though the maximum growth period age of beef cattle could be determined.

DR. CHAMBERLAIN'S CHAMPION SWISS GOAT

Dr. James Chamberlain, a prominent veterinarian of Washington, D. C., is the owner of the champion milk goat of the capital city. She provides a daily average of eight quarts of milk which goes toward supplying tuberculous patients in Washington hospitals.

EPISTAXIS IN A COW

In your "Queries and Answers" section of VETERINARY MEDICINE I noticed a communication from D. E. I., S. W. relative epistaxis in a cow. Your correspondent may be interested to hear of a somewhat similar case occurring in my practice which on postmortem examination revealed a foreign body in the lung. The case was reported in a paper entitled "Foreign Bodies Penetrating the Reticulum" published in the Ohio State Quarterly, Vol. 9, No. 3.
University of Delaware, Newark.—C. C. Palmer.

MOLDY HAY

Two of my calves are sick. The veterinarian, Dr. Gray of Windom, thinks it is the hay that has caused the sickness. He asked to send it to Ames. Will you have the hay that I am sending examined and let me know if there is anything the matter with it?—F. C. B., Minn.

Reply by Prof. Pammel: The hay is moldy and musty, made up of mostly timothy, some red top, a little wild dropseed grass and some wild barley. No one of the above grasses is injurious, except the wild barley, which is injurious only in a mechanical way. I suspect that the trouble may have been caused by the moldy hay.

Every Practitioner Has at Least One Such Client

The morning of February 1st, 1922, I was called to the farm of a man who said that he had a cow that wouldn't eat, "ate the night before, but wouldn't eat now." He said he gave her a dose of salts (and more salts) two hours before calling me, but it did her no good.

Inquiry disclosed that she had freshened about two months before, went off her feed shortly after, for a few days, had been very greedy since, but failing in milk and flesh.

The cow was a grade Holstein, seven years old, and had been purchased a year before.

While I was conducting the examination, the owner kept up a line of talk that went something like this: "Whatever is the matter? Can't be holler horn, cause she ain't got no horns. Is it holler tail? Her tail ain't sore," pinching her tail, "Has she lost her cud, doc? She don't chaw it any more. Tied a rope of hay onst in a cow's mouth that lost her cud and she chawed alright."

I asked him if the cow recovered and he said: "Naw, she had woom trouble."

On completing the examination, I had found the following: Temperature normal; heart strong but very fast; rumen not distended but of a doughy consistency; no tympany; peristalsic wave and murmur absent; rectum full of feces and covered with a heavy mucous coating and very hard; respirations shallow and of an abdominal nature; pulse weak; eyes bright but conjunctiva injected; mouth contained sticky, pasty saliva; visible mucous membranes cadaverous; ears drooping.

I gave a dose of barium chlorid, tartar emetic and fluid extract of nux vomica, and left a stimulant and tonic to be given every three hours. I also instructed the owner to call me if any change was noticed. On February 3rd, he called me and said that her bowels had moved some, but cow seemed worse and to come out.

On arrival, I found the cow lying on the left side, but well up on the sternum. On arising, she walked to her stancheon very slowly and stiff in all quarters. The examination brought forth the following: temperature subnormal; shivering in posterior parts; respiration almost absent; heart very weak; could barely be heard with stethoscope; pulse venous; jugulars plainly visible at a distance; edema of inferior submaxilaries.

On informing the owner that she had a foreign object of some kind puncturing her heart, possibly a wire or nail, that I could not do anything for her and if he would phone me when she died, I would open her. I could see that he did not believe anything of the kind, but said: "She's plugged, can't you do something to open her up?"

He telephoned me the morning of February 4th to say that he had found cow dead in stancheon at four o'clock the evening before. While removing the left part of the thoracic cavity, the owner kept repeating, "She's plugged, she's plugged, that's what she is, she eat too much cotton seed meal. You'll see. Wire nothing."

On opening up the chest, the heart was found to fill the entire lower part of the cavity with lungs lying on top of it. The owner on getting sight of the heart said: "What's that?" and I told him that was her heart, to which he replied: "Heart nothing, that's her paunch." A bystander said: "Sure, that's her heart, where do you think the heart is, in the back end?"

The heart was adhered to the left wall of the cavity and to the rumen, and diaphragm. In dissecting it out, I cut into a wire that was lying one-half in rumen and balance in heart. The wire was about three and one-half inches in length. On giving the wire to the owner, he exclaimed: "By gum, how did it get there?"

The heart was solid and much enlarged, weighing twenty-one pounds.

As I left, the farmer was saying: "Good Night! Good Night! What do you know about that!"—R. P. B., Mich.

Chinch-bugs threaten to infest the land over the entire Mississippi Valley much the same as in 1887. Over 65 counties of Illinois are already infested and unless measures are taken to combat them, serious losses will occur next year, according to a warning from State Entomologist Flint, of the University of Illinois.

Chinch-bugs reduce the yield of corn, barley, wheat, oats, millet and other grass crops. They do not injure legumes or any crop that is not a grass.

Milk, according to Clayton and Clayton, is one or, if not the best, forms of protein to provide growing chickens and laying hens.

Abstracts of Foreign Literature

Edited by A. EICHHORN, D. V. S.

DIAGNOSIS OF THE SEX OF CHICKEN EGGS

Each breed of pure-bred chickens lay eggs that show a regularity as to weight, e. g. 55 grams for Houdans and 60 grams for Bresses. The sexes can be separated by the simple process of weighing. The heavy eggs are males and the light ones are females. The method is of less service, however, in mixed breeds since the weight of their eggs vary. In Leghorns, Minorcas, Houdans, Bresses or any of the old breeds the results are always satisfactory.—M. Lienhart, Revue Veterinaire, Oct. 1922.

IS THE BACILLUS ABORTUS BANG PATHOGENIC FOR MAN?

Abortion in cattle is in most cases due to the Bang bacillus which is also at times responsible for abortions in swine, goats and sheep. The action of the abortion bacillus has also been established on artificial infections of the mare, dog, monkey, rabbit and guinea pigs. The question whether the Bang bacillus might not be of importance in the premature births and abortions in women has not yet been cleared and is worthy of further consideration. The possibility of such action of this organism is suggested by various observations namely, where perfectly healthy wives of farmers aborted without any apparent cause for the same. Later disclosures, however, revealed the presence of an infectious abortion among the cows on the farms. Likewise the fact that these particular women consumed raw milk from such infected herds. Therefore it is not unreasonable to consider a connection between the infection in cattle and abortions in women. —Klimmer and H. Haupt (Munch. med. Woch., 1922, p. 146).

VACCINATION AGAINST RABIES OF LARGE HERBIVOROUS ANIMALS

The horse was bitten on the nose by a rabid dog. The diagnosis on the dog was confirmed by microscopical examination of the brain and by inoculations of rabbits. The authors vaccinated the horse according to the method of Remlinger. The treatment was commenced twelve days after the horse had been bitten.

The horse received three subcutaneous injections at four day intervals of 150 cc of an emulsion consisting of distilled water and rabbit brain (fixed virus) which was kept for 72 hours in ether. For the fourth injection which was undertaken two days after the third they used a brain which was kept in the ether only for forty-eight hours. The horse remained well during a period of observation of nine months, even after the following control test was made. An emulsion was prepared from the brain of the dog affected with rabies of which 40 cc was injected seven days after the last injection of the vaccine. A control horse received 20 cc of the same emulsion subcutaneously and developed in 69 days the characteristic manifestations of rabies. In view of the great value of domestic animals at the present time the authors recommend vaccination in favor of the prescribed slaughtering of the exposed animals.—Finzi and Rondelli (La Clinica Vet., October, 1920).

MILK OR SALIVA INFECTS PUPS WITH RABIES

A number of recent articles refer to the possibility of hereditary transmission of rabies from the mother to the offspring. Among these, an observation by P. Cremona of Turin, Italy, refers to rabies in two very young pups. The bitch fell sick on March 30 and died April 19, with clinical symptoms and laboratory confirmation of rabies. Of four pups that suckled until April 11 one died of dumb rabies at the age of 70 days. The diagnosis was confirmed by the finding of Negri bodies and by the injection of cerebral substance into a rabbit. A second one died at the age of four months from rabies also confirmed and the other two survived.

The author attributes the infection to the milk or virulent saliva infested during the first days of the mother's illness or during the final days of the period of incubation.

As the blood of a dog is virulent a long time before the disease appears and this bitch survived 20 days after falling sick it does not seem that this was an infection via the placental route but that the pups ingested the virus with the milk or saliva.—Clinica Veterinaria, June 1921.

THE TREATMENT OF ATONY OF THE UTERUS WITH PITUITARY EXTRACTS

The authors conducted very extensive experiments with pituitary extract on various species of animals. As a result of their observations they conclude that pituitary extract (pituitrin) is splendid and effective in its action as an ecbolic by its marked stimulation of labor pains. It is not very suitable for inducing artificial abortion in large animals. However, for the purpose of increasing the frequency of labor pains in all stages of parturition it affords very good results; it induces its best action during delivery.—Professor Richter and Dr. Thierfelder (Berl. Tier. Woch., No. 21 and 22, 1922).

ON THE ETIOLOGY OF DECAYED TEETH

Dentists since the early days of bacteriology have believed that caries is an external process —a sort of bio-chemic decomposition of the dental tissues. The current theory in this connection is that carbohydrate material lodging about the surface of the teeth, ferments, forms lactic acid and gnaws out the cavity of decay. According to Howe* this notion is not supported by animal experimentation. In a series of experiments with guinea pigs this author has shown that extensive decalcification of teeth and some parts of the bones can be induced by scorbutic feeding and that an antiscorbutic diet will cause recalcification of teeth and bones thus demineralized.

When guinea pigs were fed a diet consisting of soy beans, rolled oats, dried milk, butter, calcium carbonate, salt and agar, together with an additional roughage of filter paper, for a period of fourteen weeks (without orange juice) the teeth were extensively decalcified and the alveolar process became disintegrated and pus-ridden as in pyorrhea, and despite the fact that the animals had eaten well and gained in weight the joints were enlarged and locomotory impediment was manifest. The femurs and tibias decalcified so extensively that they pulled apart at the epiphyseal line.

When these same animals were put on an antiscorbutic diet (orange juice added) recalcification occurred. Large areas of newly formed bone developed on the jaws, the long bones showed exostoses, and cartilage calcified.

The conditions seem distinct from rickets and show unquestionably that a proper supply of calcium is important and that this salt is the inorganic constituent of foods most likely to be deficient.

Everyone knows that calcium, if not supplied with the food in sufficient quantity, is withdrawn from the teeth and bones to regulate the mineral equilibrium of the whole body and thus produces disorders the cause of which have heretofore been thought to be bacterial:—caries, osteoporosis, arthritis deformans, etc.

*Jour. A. V. M. A., Nov. 4, 1922.

NEOSALVARSAN FOR MALIGNANT CATARRHAL FEVER

On a farm equipped with newly erected, very good and hygienic cattle barns, two animals became sick in July during the period of stable feeding. Both died. The remaining 17 animals were turned out to pasture. After 14 days another case developed and in spite of the change of pasture and drinking water, ten additional animals died up to October. Toward the middle of October the 11th animal became affected. Following the suggestion of the district veterinarian, this animal was subjected to salvarsan treatment. Five and four tenths grams neosalvarsan was dissolved in 200 cc of water and was administered intravenously. On the following day marked improvement was noticeable with complete recovery after one week with the exception of an affection of the eyes which required attention for three months. While the author does not desire to draw conclusions from this case, he is of the opinion that the treatment deserves further consideration.—J. Persson (Svensk. Veter., 1921, p. 326).

THE VALUE OF THE VARIOUS DIAGNOSTIC METHODS IN DOURINE

Based on the investigation of numerous cases and extensive animal experiments the author established the following results for dourine in Italy. No diagnostic value can be attributed to biological tests, the thermo-precipitation, the nonspecific reactions of Klausner and Porges, the hemagglutination of Yorke, the protective action of the serum of the patients on infections of rats with nagana, Wassermann syphilis reactions, the lecithin test of Compana and the examination of the urine for sugar.

Whereas the diagnosis is conclusive by microscopical demonstration of trypanosomes in cases of positive precipitation tests, agglutination and complement fixation tests; especially the latter is conclusive. All three reactions do not occur in all

cases simultaneously. It may occur that in some instances the result of the reactions of the three methods are contradicted which makes the diagnosis doubtful. Of the other tests the auto hemagglutination is of doubtful value, whereas the intrapalpebral and the vulvar reaction are of value with the limitation that the outcome of the reactions is greatly dependent on the extracts employed.—Dr. L. Sani (La clinica Vet., 1922, No. 4).

ACTINOMYCOSIS OF THE LIVER IN A TURKEY

A liver of a turkey disclosed numerous nodules on the surface as well as in the parenchyma, surrounded by a connective tissue capsule. They were partly grown into the surrounding organ and contained in part a milk-like fluid and again a granular more or less solid mass of a milkish white to dark orange color. Some appeared as composed entirely of connective tissue appearing as white spots on the dark base of the liver.

Preparations made from the fresh material and stained with Gram and Gram-eosin method revealed on microscopical examination distinctly isolated spores, threads and clubs as well as typical isolated and groups of colonies of actinomyces which possessed a central and peripheral zone. The author further cites recorded cases of actinomycosis in a hen's egg, in the organs of geese, pigeons and chickens which were recorded in Italian literature. He considers the occurrence of such cases more frequent than it is generally assumed and points to their practical importance in confusing them with tubercular and parasitic changes. The publications further suggest that liver actinomycosis occurs with great frequency in the larger animals of Italy.—Dr. Galbusera (La Clinica Vet., No. 4, 1922).

MENINGITIS IN THE HORSE CAUSED BY THE LARVA OF THE HYPODERMA BOVIS

The author examined a larva of the Hypoderma bovis which was sent to him by a veterinarian as having been found under the dura mater of the left portion of the cerebellum. The horse one night became suddenly sick showing symptoms of great distress. Shortly after the animal became quieter and on urging got up although he slightly staggered. The head and neck was held slightly to the right; there was pronounced nystagmus; otherwise no symptoms. The pulse was slightly accelerated. The treatment consisted in the application of ice to the region of the brain. Eight days later the nystagmus disappeared, likewise the weakness of the legs improved. After a month tne horse was used for work. At that time only a slight bending of the head with slightly crossed eyes was observed. Five weeks after the first attack the animal again became affected. It laid on its side and could not be made to rise, having lost entire control of the head and legs. There was great restlessness without nystagmus. The animal was slaughtered. As mentioned above the larva was found on the cerebellum. The larva was only slightly attached to the cerebellum.—H. Magnusson (Svensk. Veter., 1921, p. 229).

THYROIDECTOMY IN HORSES

The thyroid gland has been removed in eight horses of various ages. The result was a pronounced retogression in growth determined by accurate measurement of various parts of the body and by successive weighing of the animals. In some of the cases death from cachexia resulted within a few months. In fully mature animals no visible changes occured following the thyroidectomy. Following the operation all animals developed a transitory hyperthermia. Some developed pronounced synovial demas.—Houssay and Hug. (rev. d. Inst. bact. Buenos Aires, Vol. 2, No. 5).

PROSTATITIS IN DOGS

Hypertrophy is the most frequent disease condition of the prostate gland in dogs. Dr. Kracht-Pelejeff attributes the cause of the enlargement of the prostate gland in dogs to four different disease conditions: (1) glandular hypertrophy, (2) pseudo-hypertrophy (hypertrophy of the fibromuscular tissue) (3) cystic degeneration, (4) purulent inflammation.

In all cases the enlargement of the prostate in dogs the author found an inflammatory condition. The inflammation was either catarrhal (desquamative) or purulent. Besides there were always present a proliferation of the connective tissue, involvement of the musculature, the glandular tissue or its epithelia and accompanied by cystic formation.

Lesions of old or fresh hemorrhages were always present. In the cases with proliferation of the musculature an enlargement of the muscle nuclei was found. The latter must be con-

sidered as an indication of a volumetric hypertrophy. Prostratitis may occur in association with carcinomatosis. Inasmuch as the author recognized the carcinoma only on microscopical examination it seems indicated to examine all cases microscopically. Such practice would enable to establish whether prostatitis belongs to the precarcinomatosis affections. Nothing could be added to the etiology of this condition as neither bacteria nor other conditions which would shed light on the cause of this affection were found.—G. Fluckiger (Inaug. Dissert. Bern, 1921).

HYPERTROPHIC ENTERITIS IN A CAT

In Bern and its vicinity the intestines of cats very frequently disclosed an enteritis which is more or less chronic. The processes of new formations which accompany this inflammatory condition lie principally in the connective tissue. The connective tissue of the middle portions of the tuffs; likewise the connective tissue of the submucosa show a proliferation. The author failed to disclose anything to suggest the etiology of this condition. The following pathological changes accompany the enteritis: Emaciation, fatty degeneration of the liver, necrosis of the liver cells, tumefaction of the liver, and hemorrhages in this organ. Lymphadenitis of the mesenteric lymph glands may also occur. The enteritis is frequently the only cause of death. It may be found, however, in autopsies of cats which died from other causes. —S. Stavimirovitch (Inaug. Dissert. Bern, 1921).

GOITRE IN DOGS

The principal pathological changes of the thyroid gland of the dog may be classified as follows:

Enlargement of the follicles without colloid (Struma parenchymatosa). The same is usually accompanied by a disquamation of epithelial cells. The disquamation is very well marked. Inasmuch as the disquamated cells often necrotize this form of goitre may be signified as disquamation of the Struma. The reduction in size of this form appears to result from the disappearance of the disquamated cells and the formation of sclerotic connective tissue. This results in a change of the thyroid in which there is no organ enlargement.

Enlargement induced by the filling of the follicles with colloid. The follicles are very often markedly enlarged so much so that they may become visible even macroscopically.

Cyst formation (Struma cystica) which may originate from two processes, (a) enlargement of the follicle and (b) colliquation necrosis, especially of the sclerotic, connective tissue.

Calcification (Struma petrosa). The deposit of lime occurs without and within the follicles.

Increased vascularity (Struma vasculosa) which may be very pronounced or moderate.

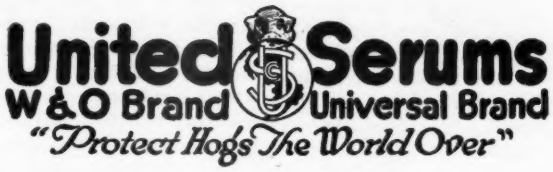
Arteriosclerosis: the intima is usually considerably thickened.

Sclerosis of the connective tissue.

In one case the Struma colloida formed the base for the development of a carcinoma.—N. Nozinic (Inaug. Dissert. Bern, 1921).

TREATMENT OF PURPURA HEMORRHAGICA WITH STRYCHNIN

The author reports two cases of purpura in which he obtained good results from the injection of strychnin solution. In the first case the horse developed the disease seventeen days after an injury of the right metacarpus. The temperature was 40.6, swelling of the fetlock and around the nasal openings. Profuse perspiration and slight dyspnea. On the first day the horse was given intravenously 400 cc of purpura serum. This was followed by a lowering of the temperature and elimination of the dyspnea. The edema became more intense on the extremities and on the abdomen. On the third day the condition became more aggravated in spite of the renewed administration of serum, so much so that on the sixth day it became necessary to perform tracheotomy. The administration of salvarsan two days later failed to improve the condition. On the twelfth day at which time the edema was very extensive and painful, a solution of 0.025 grams of strychnin in 10cc of water was injected subcutaneously. The following day a pronounced improvement with a diminishing of the edema was noticeable. The injection was then repeated. Two more injections were given at two day intervals. Complete recovery followed. In the second case, which is not described in detail, the horse was given 0.006 strychnin three times a day on two successive days. Then a day's intermission and the first treatment repeated. In this case, also, a prompt action of the treatment resulted with complete recovery of the animal.—A. Polman (Svensk. Veter., 1921, p. 68).



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Live Stock Poisoning

By Professor L. H. Pammel, Associate Editor.

SUPPOSED POISONING FROM VELVET WEED

I have had some sudden deaths in a herd of hogs which on postmortem examination showed numerous seeds of the commonly called butter print or button weed in the stomach. These weeds were cut down the day before the trouble occurred. Please advise me if the so-called seeds are poisonous.—H. I. McC., Ia.

Reply by Prof. Pammel: The plant has been regarded as poisonous and is so listed in some books. I have observed that cattle do not eat the weed as a general thing. The plant is related to cotton and is known to botanists as Abutilon theophrasti. The capsules are pointed and I suspect that when eaten in large numbers may be injurious mechanically.

IS WILD FOXGLOVE OR BEARD-TONGUE POISONOUS?

I am sending you a specimen of weed, said to be St. John's weed, for identification and information as to its toxicity. Please let me have your opinion at the earliest possible convenience.—D. C. S., Ohio.

The specimen is one of the native beard-tongues (Pentstemon laevigatus) a member of the foxglove family. The flowers are greenish-white and the leaves opposite. A few species of beard-tongue are widely distributed in eastern North America; others are common in the Rocky Mountains. So far as I know the plants have never been suspected of being poisonous.

The cultivated European foxglove (Digitalis) is related to it and is, of course, poisonous as are also other plants of the family. St. John's wort (Hypericum perforatum) grows in places similar to that of beard-tongue. It is likely if you will look for St. John's wort it will be found in the pasture. The capsules of St. John's wort are erect and not conical and the leaves opposite, and on green leaves fine little dots occur.

CASTOR OIL BEANS POISONOUS

A number of cases of poisoning from the eating of castor oil beans have been reported at various times. It is strange, however, that more cases are not recorded because of the frequent cultivation of the plant. I wonder if any of the readers of VETERINARY MEDICINE have any cases of poisoning on record. The following case of human poisoning in Iowa is recorded in the Des Moines Register of Sept. 15, 1922; a Mrs. Kepford of Hawarden, Iowa, who ate a number of castor beans: "Mrs. Kepford ate a number of the beans Saturday and after a few hours was taken violently ill. She continued to suffer from nausea Saturday night, Sunday and Monday and then consented to have a physician called. She rapidly became more seriously ill, the poison spreading through her system and she died Tuesday night."

LOCO POISONING

A. E. Troy (Jour. Am. Vet. Med. Assn., Vol 60-297) in a paper presented at the Denver meeting of the American Veterinary Medical Association, discusses two of the loco weeds; the white loco (Oxytropis lambertii) and the purple and woolly loco (Astragalus mollissimus). This writer found that the loss from the white loco far exceeds that from all other sources combined and it also causes a depreciation of purebred stock. The purple or woolly loco is not so important. The symptoms of loco poisoning in cattle are much more varied than in sheep. Locoed cattle seem to prefer hill tops or rocky hillsides on which the loco weed abounds and here the acute symptoms develop. Locoed cattle become gaunt. The animals will remain in the locoed patch for days.

Dr. Johnson of New Mexico state college says that acute cases of loco poisoning can be controlled by digitalin. The paper is a good one from a practical standpoint.

The Arizona Agricultural Experiment Station has just completed a preliminary experiment to determine whether or not the rayless golden rod was poisonous to animals.

According to the experiment, it would seem that the golden rod is not injurious, at least when consumed in any reasonable quantities.

The kidney worm (Stephanurus dentatus) is of common occurrence in swine in Guina, South America, according to Rousseau.

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Queries and Answers

Treatment of Fowl Parasites

WILL you kindly give me the best method of handling intestinal parasites in poultry?

I have been using the tobacco treatment with the objection that the parasites are not killed when evacuated and the birds eat them immediately, thereby causing a reinfestation. We have been very careful in carrying out our clean-up plan but as yet our results are not pleasing.

Is carbon-tetrachlorid effective for fowl parasitism, and if so, what dose and method of administration would be advisable?—C. W. B., Kans.

Reply by Maurice C. Hall: I take it that the tobacco treatment to which you refer is the one proposed by Herms and Beach of the California Experiment Station, the treatment being as follows:

The Tobacco Treatment

For 100 birds, steep one pound of finely chopped tobacco stems for two hours in water enough to cover them; mix the stems and liquid with one-half the usual ration of ground feed; the day previous to treatment withhold all feed, giving only water; after the birds have fasted for twenty-four hours, feed the mash thus prepared, and two hours after it is cleaned up give them one-fourth of the usual amount of ground feed, mixed with water in which Epsom salts have been dissolved, at the rate of eleven ounces for each 100 birds; treatment to be repeated in ten days.

This treatment appears to be most satisfactory for the removal of the large roundworm, Ascaridia perspieillum, from the small intestine and gave good results in the tests reported by Herms and Beach. It has the advantages and the disadvantages of mass treatments. One advantage is that it is unnecessary to handle the individual birds and this effects a saving in time which is considerable in the case of large flocks. The disadvantages are that the prolonged fasting necessary to make the birds eat the tobacco-mash mixture causes a temporary fall in egg production, and some of the weaker birds most in need of treatment for worms, may fail to eat enough of the mash to get the full benefit. Where a single-dose treatment is desired, the California station recommends oil of chenopodium in preference to tobacco, giving one teaspoonful of chenopodium, thoroughly mixed with a moist mash, for each twelve birds. Where individual birds were treated, Hall and Foster found that two cc. of turpentine, given in castor oil, removed 76% of these worms, and that chenopodium in doses of 0.2 cc., given in castor oil, removed 69%.

Rectal Injections of Chenopodium

Up to the present time no satisfactory treatments have been devised for the removal of the cecum worm, Heterakis papillosa, from the ceca by means of drugs administered by mouth. In the experiments reported by Hall and Foster, the tobacco treatment removed 19%, less than one-fifth, of these worms with one treatment. At the recent meeting of the A. V. M. A. at St. Louis, a method for removing these worms was reported in a paper by Hall and Shillinger as being 90% effective in a test on a series of birds. The treatment is by means of rectal injections of oil of chenopodium in a bland oil, such as cottonseed oil. The dose is 0.1 cc. of chenopodium in 5 cc. of cottonseed oil for birds weighing 1.5 pounds; probably double this dose would be effective for birds weighing three pounds or more. The mixture may be made up at the rate of one teaspoonful of oil of chenopodium and six fluid ounces of cottonseed oil, and given at the rate of one-third ounce to birds weighing three pounds or more, with proportionately smaller doses for smaller birds. The mixture may be given with a hard rubber syringe, preferably the infant's size syringe. It is as easy to treat birds by rectal injection as by mouth where individual birds are treated. The tip of the syringe should be passed along the floor of the cloaca and the mixture injected slowly.

At the present time it is impossible to make definite recommendations in regard to the treatment of poultry for tapeworms and experiments along this line have yielded unsatisfactory results for the most part. A method of treatment

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which has been recommended by Guberlet of the Oklahoma Experiment Station, and which has the advantages as well as the disadvantages of a mass treatment, is as follows: A gallon of a mixture of wheat and oats, to which is added a small tablespoonful of concentrated lye, is cooked slowly for about two hours and allowed to cool; the birds are fasted for about fifteen hours and then given as much of the mixture as they will eat, with plenty of water. Guberlet reported good results from this mixture, but Wickware has recently reported unsatisfactory results from the administration of lye for the removal of tapeworms from poultry.

Reinfestation from Live Worms Passed

The fact that an anthelmintic may not kill the worms it removes, is not an objection to the use of the anthelmintic. The worms which pass alive after an anthelmintic, cannot enter and develop or remain alive in another host animal as a rule, in all probability. On the other hand, the eggs present in worms removed by anthelmintics are probably capable of development as a rule, although careful experiments to determine the facts in regard to this for different anthelmintics have not been made. However, these eggs are least dangerous when first passed from the host animal. The tapeworm eggs must first be swallowed by an intermediate host, the intermediate hosts for chicken tapeworms and tapeworms of related birds including insects, such as the house fly and stable fly, earthworms, slugs and other small invertebrates. The nematode eggs require time for development to the infective stage. Anthelmintic treatment followed by the passage of a large number of worms may enormously increase the number of worm eggs present for a time on a given area, but if the feces are carefully removed for the first two days after treatment in the case of birds, the birds will then profit by the loss of worms and the decreasing soil infestation from the cessation of egg production by the worms.

Carbon Tetrachlorid

As regards the use of carbon tetrachlorid for removal of worms from poultry, we have as yet very little in the way of data on this subject. In a paper read before the Illinois State Veterinary Medical Association last year, Hall and Shillinger reported that chickens were extremely tolerant of carbon tetrachlorid, surviving doses of 20 cc. per kilo of live weight, or approximately sixty-seven times the dose rate for the removal of hookworms from dogs. When the drug was given in doses of two, four and five cc. per kilo, it removed all the large roundworms from the small intestine, and failed to remove any when given at a dose rate of 1 cc. per kilo, the drug being given by means of a catheter passed to the erep. More work is necessary to determine the possible value of this drug for removing worms from chickens. Carbon tetrachlorid is of no value for removing tapeworms of any sort.

GANGRENOUS STOMATITIS OF DOGS

I am getting a number of cases of gangrenous stomatitis in dogs and would like information through the columns of the journal as to the best treatment.—D. R. B., Australia.

Reply

By gangrenous stomatitis we assume you mean the disease which in this country is known as black tongue or dog plague, a disease that is quite common throughout the southern states. It is described as highly contagious by some and others, particularly practitioners in the South, are beginning to believe that it is not a contagious disease at all, but belongs to the deficiency disorders. Brumley pronounces it highly contagious, attributes its spread to dog shows and reports that it has practically annihilated dog breeding in some sections.

The medical treatment recommended by Dr. Quitman in VETERINARY MEDICINE, November, 1921, is as follows: Begin by giving from five to ten grains of sodium cacodylate subcutaneously and then follow with either of these prescriptions internally:

℞

Powdered iodin.....1 gr.
Liquid petrolatum.....1 oz.

Mix. Give a teaspoonful every four hours.

℞

Calomel ..... 2 grs.
Quinin sulphate .....15 grs.
Phenol salicylate .....½ gr.

Mix and make 16 capsules. Give one capsule every three or four hours.

RINGWORM IN DOGS
(Herpes tonsurans)

What is the best treatment for ringworm in dogs? I am getting fairly good results from the ordinary treatment, but would like to have the best known formula for it.—B. A. B., Australia.

Reply

For localized cases there is nothing better than pure tincture of iodin applied after giving

the spots a good washing to rid the surface of encrustations. Generalized cases require more careful attention. These should be given scrubbing baths after clipping the whole body. The bath water should be made alkaline with a small amount of sodium carbonate. The best parasiticide we have found for this purpose is mercuric chlorid solution 1-500 well rubbed in with a fairly rough brush. Mercurial ointment is also very effectual. Iodin ointment made with petrolatum at the strength of 1-16 is the remedy of choice in many of the canine hospitals, but this must always be applied with due regard for the possibility of its toxicity when used over the whole body.

SLIMY MILK

Can you give me any information about the cause of slimy milk? One of my clients who has only a few cows is troubled with a condition of his herd that manifests itself by the milk turning into a slimy state. I have read about this somewhere in VETERINARY MEDICINE but am unable to find it now.—J. U. L., Ind.

Reply

Slimy milk is due to a bacterium that contaminates the stable and utensils. It is not due to a disease of the cows themselves, although they might be carriers through dust and litter that gets into the milk pails. The usual carriers, however, are the utensils through the water used to wash them. The trouble might be at the distributing station where carelessness might prevail in washing the cans.

BOTULISM IN CHICKENS

I was consulted the other day about the death of over a score of chickens that occurred on a farm I was visiting for another purpose. On making a couple of postmortem examinations, I was unable to find any lesions to account for the fatalities, but on inquiring about the feed I learned that the farmer's wife had thrown out into the barn yard a jar of spoiled home-canned string beans that was ravenously devoured by the flock. Is it possible that so many chickens could have died from eating this single quart of spoiled beans?—J. D. C., Ohio.

Reply: The beans, without doubt, were the cause of the deaths and the disease was doubtless botulism. The amount consumed was sufficient to have caused even more fatalities as the toxin of the B. botulinis is very fatal to chickens in very small doses.

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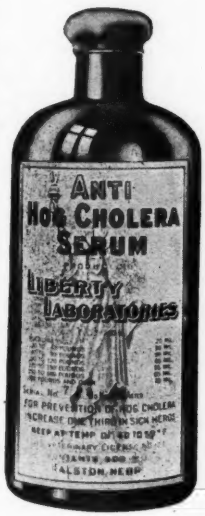

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PARAPLEGIA IN DOGS

I would like information about a spaniel dog that showed signs of partial paralysis much like a horse affected with paraphlegia. The symptoms were not very pronounced when I first saw him but the owner said they were much worse the morning before. The day following my first examination I found my patient lying on the floor unable to use the hind legs, urine dribbling from the sheath and marked excitability when approached and handled. I took him to the hospital and relieved the bowels of hard fecal matter with an enema. There were convulsions at intervals of fifteen to twenty minutes that would last about a minute. He was very nervous, struggling every time he was handled. I diagnosed the case as spinal meningitis but after noting that the jaws were set and the eyes retracted I thought it was probably a case of tetanus.—C. A. K., Ont.

Reply

This case can be explained as one of distemper with convulsions and paralysis as the complication, that is to say one of the nervous forms of the disease. It was not tetanus because paralysis is not a symptom of that disease, while on the other hand, set jaws and retracted eyes are common enough during the convulsions of distemper.

We head this query paraplegia because practitioners are not ready to give up the idea that transverse paralysis in dogs is not a special entity, in spite of the fact that authorities are content to pass this condition off as a phase of other diseases. Some say it is always due to distemper infection; some like to attribute all cases to worms; some call it purely nutritional; while still others claim it is toxemia originating in the intestinal tract. It seems we do not know all about paraplegia of dogs especially those cases in which the paralysis of the hind legs is the only symptom and which either die finally or slowly recover. The acute cases we call distemper and let it go at that, while the chronic ones we attribute to a variety of causes yet to be proved.

FRIGHT DISEASE IN DOGS

In your October issue there was an article about the disease of dogs that has caused trouble from North Carolina to Texas. It is very common in my part of this state (Arkansas). The laity calls it running fits, barking fits, etc. I believe it is a brain and spinal cord affection after having treated some 50 to 60 cases in a single month.

I used sodium cacodylate at first after giving a brisk purgation, but now I administer calomel and santonin, one grain of each every two hours and the next day follow with a mixture of fluid extract of cascara segrada, one ounce and elixir iron, quinin and strychnin, two ounces, in teaspoonful doses, three times a day in a forty-pound dog, smaller ones in proportion. This treatment has given me excellent results, but I know of cases that recovered without treatment.

Magnolia, Ark. O. W. Collins, V. S.

It is necessary always to make a good pre-

DOES A BEE HAVE A FATHER?

Will you please tell me the truth about the statement of a bee-man who insists that bees have a grand-father but no father? If true, as I am assured, how is this explained scientifically?—J. M. W., Ill.

Reply by Dr. T. A. Kragness,

The statement is true as to drones only. It is, however, not true in the case of workers nor of queens. The queen when fertilized by a drone is fertilized for life, or more properly speaking, is impregnated with seminal material that is stored away in a separated pouch for future use. On laying eggs she has the power of fertilizing or not fertilizing the eggs as she lays them. The fertilized ones develop into workers while the non-fertile by a process of intensive feeding makes drones. It is therefore true that the drone does not have a paternal parent because no male participated in its birth, but that it has a paternal grand-parent because the queen does have a paternal parent—a father.

HYDROCELES. BOOK ON THE DOG

Will you please outline briefly how to remove the so-called "water seeds" in castrated mules? Also, tell me the best way to prevent them from forming.

Could you suggest two or three books that I could get for reference work on canine practice? I have Doctor Muller and Glass' Disease of Dogs, second edition. Is there a later edition of that book, and is it necessary to get if one already has a second edition?

Reply

Hydroceles of geldings or mules are amendable to surgical treatment. The patient is cast, the sac separated from the skin, and then cut off with an ecraseur.

liminary examination to exclude hernia. The hydroceles are caused by not making a large enough incision in the tunica vaginalis or in not cutting off enough of this membrane when the animals are castrated.

The only new book on canine practice is Diseases of Small Domestic Animals, by Prof. O. V. Brumley, of the Ohio State University, Columbus, Ohio, published by Lea and Febiger, Philadelphia. It is a very good book for a practitioner and was reviewed in the November issue of the journal.

PHLEBOTOMY IN HEAT-STROKE

What argument can be advanced against phlebotomy in heat-stroke? D. R. B.

Reply

The best possible argument against phlebotomy in the treatment of heat-stroke is that it could not possibly do any good and might prove very harmful. Heat-stroke is an exhaustion of the heat-regulating forces of the organism and is accompanied with such a pronounced embarrassment of the heart that it would seem to be one of the conditions in which loss of blood volume might prove hazardous.

NERVOUS DIARRHEA IN HORSES

How shall I treat horses that develop diarrhea on the road? They are perfectly normal in the stable but while driving, especially on long trips, they purge severely. I have tried powdered opium, catechu and chalk and have also given a course of liquor arsenicalis, attended to the teeth and general health but the diarrhea persists.—D. R. B.

Reply

Our standard prescription for horses affected with this common complaint is powdered opium, one dram; powdered catachu, two drams, and dried sulphate of iron, one dram. This is one dose. It should be given twice a day in the feed. This will control the bowel movements while it is being administered and for a few days after, but the trouble will recur after the medicament is discontinued for a few days. We know nothing that will effect a permanent cure. Thinking that the disorder might be gastro-intestinal catarrh we have turned such horses out to pasture for a whole summer, only to find that the diarrhea is just as bad when grained and worked in the fall. We now call it nervous diarrhea awaiting a better explanation.

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"Mornin', Si."
"Mornin', Josh."
"My hogs is ailin', Si. What did you do about yourn when they wus ailin'?"
"I vaccinated 'em myself, Josh."
"Mornin', Si."
"Mornin', Josh."

Two days later:

"Mornin', Si."
"Mornin', Josh."
"Say, Si, my hogs died."
"So did mine, Josh."
"So long, Si."
"So long, Josh."

But, say, listen. These men didn't use Grain Belt Serum.

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PERSISTENT CORONARY SORE

I have horses with persistent sores just above the coronet, slightly granular but highly resistant to treatment. Have tried Quitman's powder on these cases and in fact have used about everything from bad language to Shankey's Hymn book without avail, while an empiric here calls them "slow tumors," rubs on something and clears them up. I will be thankful for advice.—D. R. B.

Reply

Quit swearing, set aside the hymn book and pin your faith in pure formalin nicely patted into the granulations daily until a good leathery covering is produced.

SPECIAL AND CERTIFIED MILK

What is the difference between special milk and certified milk? There is a milkman here who sells "special milk" and advertises his product in such a way as to lead many of his customers to believe that they are buying certified milk. I would like to have the generally accepted definition of these two classes of milk for my own information as our health officer often consults me about such matters.—J. G. D., Ill.

Reply: The term "special milk" has really no real legal meaning. It may refer to milk from a tuberculin tested herd; to milk produced under somewhat more cleanly conditions than ordinary; or it may simply be used as a deceptive advertisement for common, every-day milk.

On the contrary certified milk is a milk produced under certain prescribed conditions which vary only in minor details in different communities. In the first place its production is supervised by a medical milk commission. The herd must be free from tuberculosis and submitted to periodical inspection for disease by a competent veterinarian; and the entire routine of stabling, milking and handling of the milk must be done in such a manner as to keep the bacterial count down to fewer than 10,000 bacteria per cubic centimeter.

The United States department of agriculture will send you on application a bulletin on the subject that contains all the details you will want to know.

Dr. C. S. Lobdell, one of the most prominent practitioners of Indiana, died October 10 at his home in LaFayette, where he conducted a large practice and hospital. His death was due to acute appendicitis. He is survived by a widow and two children.

PURPURA HEMORRHAGICA. FLY REPELLENT. CAUSTIC PASTE. ULCERATION OF THE CORNEA

1. What do you consider the best treatment of purpura hemorrhagica in horses?

2. Can you give me a formula for a fly repellent suitable for spraying about stables and kennels?

3. Also please give me the formula for a good escharotic paste for removing large granulations?

4. What is the best treatment for ulceration of the cornea in dogs?—E. J. C., Australia.

Reply. 1. We believe that the best medication for purpura available today is antistreptococcic serum hypodermically and a flavine solution such as flavisol or proflavin intravenously. We give the former in large doses every second day for three days and then extend the interval to every fourth day. The flavine solution is given every day for three or four days in the jugular vein. Internally we prefer iron and sulphocarbolates for their antiseptic effect on the intestinal tract. Contrary to the generally accepted custom we believe in very careful feed with both concentrates and roughage instead of allowing the patient all it will eat, and prevent the digestive complications which so often kill patients that seem on the road to recovery with frequent small doses of a vegetable oil given per os with a syringe.

2. A number of useful fly repellents were published in the journal during the summer months. Among these we prefer: crude carbolic acid, ½ pint; napthalin 4 ounces; cotton seed oil, ½ gallon; oil of tar, ½ gallon; fish oil, 2 gallons.

3. A good caustic paste is made of equal parts of zinc chlorid; powdered hydrastis; powdered ulmas; powdered gum acacia and powdered ginger; and water to bring the mixture to the consistency of a putty-like paste.

4. Collyria of boric acid and rose water followed by instillations of protargol or argyrol solutions is probably the best treatment for ulcerations of the cornea. Some have claimed that weak solutions of permanganate of potassium are specific.

Dr. and Mrs. C. W. Sass, of Toledo, Ohio, paid the journal office staff a pleasant visit on the 24th of last month as the end of a continuous automobile run of 279 miles from their home. Dr. Sass is a rising young practitioner of Toledo, succeeding his father who is one of the old practitioners of that city.

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ZELL-STRAUB BIOLOGICS

Zootechnic Notes

By E. Mevillat, Associate Editor

The scrub bull puts the burden of making profit on the dairyman. The pure-bred bull takes it off the dairyman and assumes the burden himself.—Hoard's Dairyman.

The communities in which there is a high milk production correspond to the areas in which there is a large number of pure-bred bulls.

The factors determining the value of meat producing animals are: first, the percent of shrinkage in slaughter; second, the quality of the meat, and third, the general appearance of the meat when exhibited for sale.

Milk compounds and various substitutes for milk cannot be sold in the state of Wisconsin, as a law has been enacted and declared constitutional prohibiting the manufacture or sale of such products.

As the graduation of the price of milk according to the bacterial content is not making the headway it should, the production of high grade milk is lagging.

During 1919 the United States department of agriculture inspected food products valued at $13,391,914,000 in 67,453 different establishments at a cost of less than one hundredth of one per cent of this valuation.

The best method of preventing stomach worms in sheep, according to the Oklahoma Experimental Station report, consists of providing for early lambing, feeding the lambs well, rotation of pasture insofar as is possible, and occasionally administering some good vermifuge.

Brintnall, of Mississippi, reports that hemorrhagic septicemia is a relatively common disease of young calves. He says this disease is manifested by a general depression, coughing, more or less of digestive derangement associated with diarrhea, progressive emaciation and weakness. The Doctor says that vaccination can at least be recommended as an insurance against the disease.

Every poultry house should receive a thorough cleaning some time in the late summer to rid them of mites and other external parasites.

Pullets hatched from eggs produced by mature hens have a higher egg production than those hatched from pullet eggs. (Kempster.)

A very serious financial loss is sustained each year by our breeders because from thirty to sixty per cent of mares and a considerable number of the most valuable females of other breeds fail to produce. (W. S. Anderson.)

Sweet clover, like rye, is being found objectionable as pasture for milk-cows on account of an undesirable flavor it produces in the milk.

All egg laying records were broken when Lady Jewel, a white leghorn, had laid 335 eggs as her year test ended at the Washington experiment station. The best previous record was 324 eggs.

The number of sheep in the United States decreased over 40 per cent from 1903 to 1922. At the present time less than one-half of the quantity of wool demanded is produced. The production of wool and mutton will bring good returns to the producer.

Missouri is not only noted for the production of mules and good horses but also for the production of horses with intelligence. Recently it has been reported that a Missouri horse pumps his own water by grasping the pump handle with his teeth.

Michigan produced more than 3,000,000,000 pounds of milk during last year, of which 850,000,000 pounds were consumed as whole milk, 1,700,000,000 pounds made into butter, 90,000,000 used for cheese, 269,000,000 for condensing and 127,000,000 for ice cream. Michigan now stands sixth in milk and dairy production, says the U. S. department of agriculture.

How Science Is Increasing The Wealth Of An Industry

THE age old art of animal husbandry has never received such powerful aid as is now possible thru science's discovery and perfection of a process that revolutionizes the raising and management of swine.

For the first time in history, milk, the foster mother of mankind and all warm-blooded animals, the very foundation of life itself, indivisible, with its mysteries of nourishment still unsolved and the greatest boon to health and success with livestock is available in unlimited quantities, at all times and to suit the needs of everyone.

Nature, in her all discerning wisdom, has decreed that that portion of milk known as buttermilk shall contain the greatest amount of health and growth-producing properties of the entire milk. Mankind for centuries has known that buttermilk is Nature's greatest tonic, invigorator and aid to health and longevity

That which buttermilk does for humans, it does still more effectively for animals, and that this product often called "Food of the Gods" is available for the livestock industry of America is due to that marvelous development of science which makes possible the pasteurization and condensing of the heretofore unusable buttermilk from our creameries into **Semi-Solid** Buttermilk.

For the first time in the history of animal husbandry, a nation has been able to use buttermilk consistently and in a way to meet its universal and individual needs. With such widespread use of so remarkable a product, what could follow more naturally than a new wealth of experience and knowledge concerning its well nigh invaluable use on every farm and in every herd.

Semi-Solid Buttermilk, because of the extreme care with which it is made and through the exclusive patented process of its manufacture, possessed by no form of simple condensed buttermilk, brings back to the farmer the original buttermilk with all its health-giving values maintained intact and many greatly enhanced. That which raw buttermilk does for livestock, **Semi-Solid** Buttermilk does also and much more besides.

Through the experience of hundreds of thousands of users, **Semi-Solid** Buttermilk stands today as the greatest health-giving and growth-producing product available for universal use by farmers. Its lactic acid is Nature's greatest purifier—keeping the system sweet and clean—fortifying all organs against disease attacks, maintaining a healthy condition and developing a keenness of appetite and capacity for digesting and profitably transforming into pork larger quantities of grain in much shorter time.

Necrotic Enteritis, that dreaded disease of swine, is unknown in herds fed **Semi-Solid** Buttermilk. Numerous tests conclusively prove that this product not only prevents this disease, but is the best known agent for its cure. Abortion and sterility, two formidable foes of the breeder, are reduced to negligible quantities through its use. Scours are prevented and internal parasites find no lodging where **Semi-Solid** is fed.

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In truth then—**Semi-Solid** Buttermilk, because it makes available to every farmer the wonderful qualities of buttermilk in a form still more valuable, at a price within the reach of all, is maintaining the health of an industry and yearly developing to an ever-increasing degree the wealth of a nation.

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President

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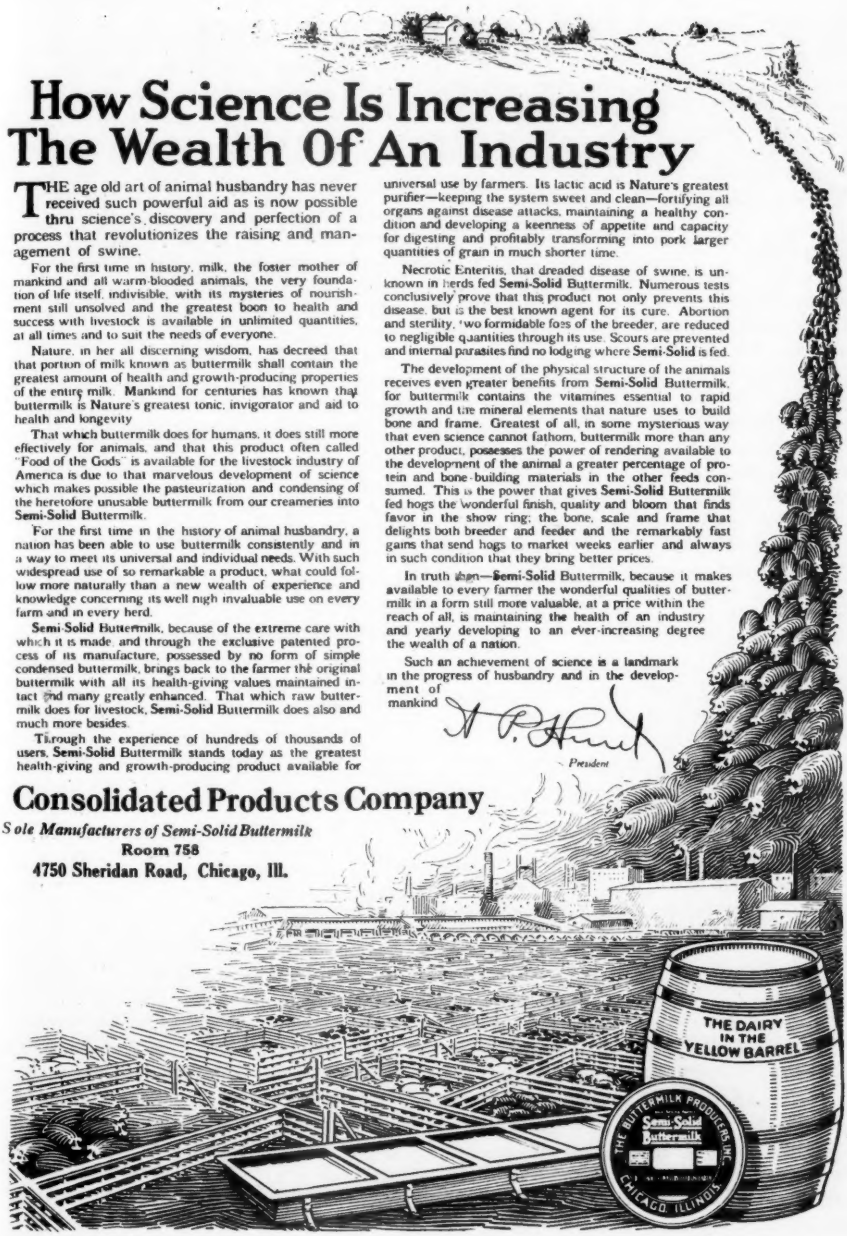

Milk Better Than Mash for Egg Production

Contrary to common recommendations on poultry feeding, no dry mash is required for maximum egg production when sour skimmilk, semi-solid buttermilk or plain buttermilk is fed as a source of animal protein, according to results of experiments being conducted for the second year at the Kentucky Agricultural Experiment Station.

The results have an outstanding value for cornbelt farmers, many of whom have skimmilk and buttermilk available together with an ample supply of grain. The results also indicate that satisfactory results in egg production can be obtained through the use of three feeds including oats or wheat, corn, semi-solid buttermilk or sour skimmilk according to J. Holmes Martin, in charge of poultry work at the station.

Results obtained during the first eight months of the experiment this year are in line with those obtained in a similar experiment last year and show that pullets which received a feed of grain and sour skimmilk produced 110 eggs each during the eight months. This average was one more than that made by each pullet in another pen, the birds of which were fed grain and semi-solid buttermilk. Another pen of pullets that were fed the same grain ration, sour skimmilk and a dry mash that did not contain animal protein ranked third in egg production, each of these birds having averaged 99 eggs during the eight months.

A pen consisting of the same number of birds fed a commonly recommended ration of grain and a dry mash that contained animal protein produced 97 eggs each while birds in a fifth pen that received grain, semi-solid buttermilk and a mash that did not contain animal protein produced 93 eggs each.

The following table in a brief way shows the performance of the pullets in the different pens:

Pen	Ration	Average Production	Feed Cost for Each Doz. Eggs
1	Grain, Mash (20% Meat Scrap)	97 eggs	12.5 cents
2	Grain, Mash (No Meat Scrap) Skimmilk	99 eggs	17.1 cents
3	Grain, Skimmilk	111 eggs	12.9 cents
4	Grain, Semi-Solid Buttermilk, Mash (No Meat Scrap)	93 eggs	17.8 cents
5	Grain, Semi-Solid Buttermilk	110 eggs	12.9 cents
6	Grain, Mash (No Meat Scrap)	29 eggs	27.7 cents

In figuring the feed cost per dozen eggs the regular market prices of feeds were taken which are as follows: Corn 84 cents a bushel, oats 52 cents a bushel, bran $28 a ton, shorts $30 a ton, meat scrap $80 a ton, semi-solid buttermilk $4 per hundred pounds, sour milk 7 cents per gallon.

The same number of pullets in another pen that were fed grain and a mash that did not contain animal protein produced only 29 eggs each during the eight months, this result being considered as striking evidence of the value of animal protein in the ration of the laying hen.

Six pens of 20 White Wyandotte pullets each, of the same age and housed under identical conditions were used in the experiment. All pens were given a grain ration consisting of 70 pounds of cracked corn and 30 pounds of whole oats. The mash fed to three of the pens consisted of 20 pounds each of bran, shorts, corn meal and ground oats while one of the pens received 20 pounds of meat scrap added to this mixture.

With semi-solid buttermilk selling at four cents a pound—a common price—the farmer could afford to pay seven cents a gallon for sour skimmilk, according to the experimental results. In the two leading egg producing pens, the hens which each averaged practically the same number of eggs, the results show that five pounds of sour skimmilk was equal to one pound of semi-solid buttermilk.

In addition to leading in egg production, the 20 pullets receiving grain and semi-solid buttermilk, and the 20 pullets receiving grain and sour skimmilk, also produced each dozen of eggs at the very low cost of feed, this cost being 12.9 cents a dozen or almost thirteen cents. Even this cost is lower than it actually seems, for on this basis the farmer received 84 cents a bushel for his corn, 52 cents a bushel for his oats and 7 cents a gallon for his sour skimmilk. The costs of the other feeds used in the experiment were $28 a ton for bran, shorts $30 a ton, meat scrap $4 per hundred pounds, and semi-solid buttermilk $4 per hundred pounds.

There is ample opportunity in poultry and poultry products in this country. China has been importing millions of eggs into the United States. American hens can produce eggs as cheaply as Chinese hens, and we should use influence in increasing poultry production.

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The average egg production in one of the most extensive poultry raising states does not exceed 60 eggs per year. It requires 90 eggs per year to pay the upkeep, therefore, a large per cent of chickens are maintained at a loss.

The entire distance traveled by cattle in pasture is in direct ratio to the size of the pasture and the supply of grass. Cattle may not travel more than one mile in a day or they may travel ten or fifteen miles. It is evident that the shorter the distance traveled, to obtain the necessary food, the greater the gain.

Wenyon reported some very interesting and important experiments in the British Medical Journal, No. 3175, on the trypanisomicidal action of "Bayer 205." It was found that the intravenous injection of 0.005 grammes of "Bayer 205," per Kilogram of body weight of mice infected with virulent trypanasoma equiperdum destroyed the trypanasoma and the mice remained healthy for at least ten weeks. This is a very important discovery providing this agent is efficacious in destroying trypanasoma in man and domesticated animals.

Whole kaffir has been found to be superior to ground kaffir for the wintering of ewes.

The new word "chevon" coined by the Sheep and Goat Raisers Association to designate the meat of goats is derived from "chevre," the French word for goat. It is pronounced sha'-von.

Charles E. Cotton, state veterinarian of Minnesota, and O. A. Eliason, state veterinarian of Wisconsin, report, through the Iowa State dairy association, that over a million dollars worth of dairy cows were purchased in those two states by Iowa farmers during last year.

BLATTENBERG

What has become of John Blattenberg, last heard of feeding horse meat to his colleagues at Columbus, Ohio? Was he murdered, legally executed or did he just die a natural death?

Reply: Blattenberg dead! Mercy, no! He has just begun to live. His temporary silence is due to a new allegiance: Ann Loraine, born in July.

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NORTHWESTERN OHIO VETERINARY MEDICAL ASSOCIATION

Seventy-five members of this large local association met in Norwalk, Ohio, September 21, and carried out an interesting literary and clinical program. The business and literary sessions were held at the Elk's club and the clinics at the Fulstow hospital.

Among the contributors from outside of the association's jurisdiction were W. R. Hobbs, of the state university; L. H. Smith, state field veterinarian; F. E. Manter, federal field veterinarian; Alvin Broerman, state bacteriologist, and F. A. Lambert, secretary of the state association. Papers were read on diseases of small animals; immunization of hogs against cholera; clinical diagnosis of poultry diseases; and on the proceedings of the national association at St. Louis.

The annual meeting will be held at Toledo in February. The principal officers are C. E. Inskeep, of Urbana, president; H. E. Ash, of Bowling Green, vice president; and P. H. Fulstow of Norwalk, secretary-treasurer.

ARKANSAS STATE MEETING

The Arkansas State Veterinary Association convened at Little Rock on October 11 with a number of stock men and poultry men present as guests of the association.

A paper prepared by Dr. B. F. Kaupp, poultry investigator and pathologist North Carolina experiment station, was read by Dr. Shull and was very favorably received.

Dr. Hubert Shull of Texarkana brought out many excellent points in the production of clean milk for the home and market at the same time clearly demonstrating the immense services practicing veterinarians may perform in conserving public health.

At the evening session Dr. D. F. Luckey, livestock commissioner, livestock exchange, St. Louis, gave an illustrated lecture on tuberculosis, convincing his audience of veterinarians and stock men that tuberculosis causes considerable economic losses, is a menace to public health and that the merits of tuberculosis eradication work are such as to urge its early eradication. Dr. B. H. Ranson, chief of the zoological division of the United States bureau of animal industry, gave an illustrated lecture on common intestinal parasites of swine, which was very instructive and interesting.

A well prepared paper of Dr. J. S. Schilling of the state college of agriculture on the preparation of material for laboratory examination

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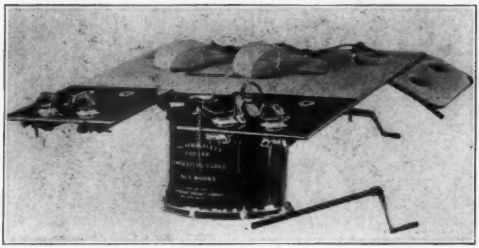

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prompted considerable discussion illustrating the import of the laboratory in the matter of diagnosis.

President Wilson ably discussed infectious abortion of swine. His experiences corroborating that of others, namely: the importance of quarantine and sanitation.

Dr. H. J. Hayes of Helena briefly discussed barium chlorid and its uses. The president suggested an open discussion in which Dr. Hayes brought up the subject of tetanus discussed by Drs. Luckey, Schull, Kittrell and Wilson. Dr. Wilson brought up and discussed briefly the subject of swamp fever. After the election of Dr. Earl Kittrell as President and J. H. Bux, Secretary-Treasurer, the meeting adjourned.

Joe H. Bux, Secy.-Treas.

NORTHWESTERN WISCONSIN ASSOCIATION

The annual meeting of the Northwestern Wisconsin Veterinary Medical Association was held at Appleton, Octoebr 18. Forty members and visiting veterinarians were in attendance. The program consisted of interesting papers and addresses, and a surgical clinic at the hospital of Dr. Wm. Madson. State Veterinarian Eliason addressed the meeting at length on the subject of area tuberculosis eradication, outlining the work done, the work at hand and that in prospect, and expressed high hopes of ultimate success of the monumental undertaking in a state with such a large and congested bovine population. Better co-operation with the veterinary practitioners and the almost absence opposition from the dairymen were given as outstanding features of the work at this time.

Those in attendance were:

Drs. A. F. Schrage, Plymouth; G. H. Atkison, Waupaca; W. F. Carey, Fond du Lac; C. D. Hemmy, New London; Frances Sexton, Clintonville; C. L. Lee, Iola; J. Tonnessen, Waupaca; E. M. Barnes, Oshkosh; C. A. Fredrich, Neenah; Geo. C. Hill, Oshkosh; L. A. Miller, Kaukauna; R. C. Finkle, Seymour; C. J. Heagle, Seymour; O. N. Johnson, Appleton; R. Kurr, Kaukauna; T. L. Knapstein, Greenville; J. W. Upright, Oshkosh; O. H. Eliason, Madison; F. A. Wilson, Green Bay; E. W. Huenefeld, Brillion; L. A. Walsdorf, New Holstein; E. W. Boom, Oakfield; W. J. Butler, Fond du Lac; J. W. Foley, Fond du Lac; W. F. Schweisow, Ripon; V. J. Laurent, Luxemburg; G. C. Webb, Kewaunee; A. H. Junge, Reedsville; C. F. Van de Sand, Kiel; F. W.

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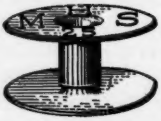

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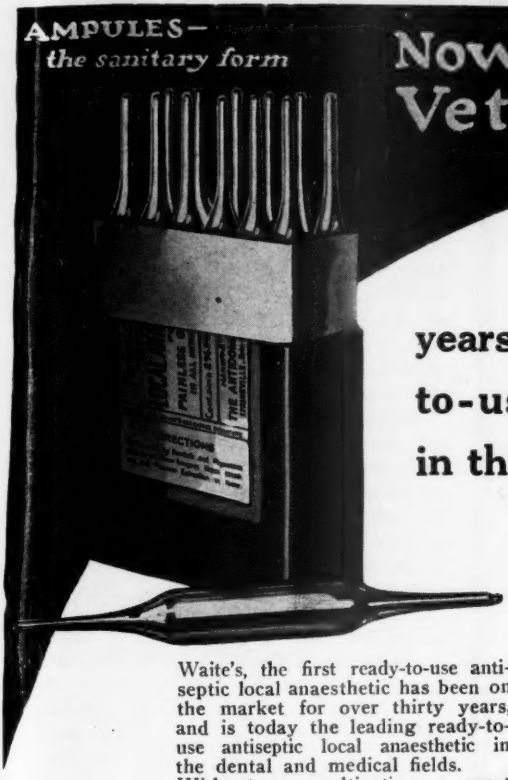

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NATIONAL ASSOCIATION OF BUREAU OF ANIMAL INDUSTRY VETERINARIANS

The fifth annual convention was held at the Planter's Hotel, St. Louis, August 25, 26 and 27, 1922, President Jas. Fleming, Kansas City, presiding. The national officers who answered the roll call were: N. L. Townsend, New York, vice-president-at-large; T. P. White, Washington, D. C., vice-president Eastern zone; A. A. Swaim, Chicago, vice-president Central zone; J. S. Grove, Oklahoma City, vice-president Southern zone; C. H. Hays, Lincoln, Neb., vice-president Western zone; and L. Enos Day, Chicago, secretary-treasurer.

President Fleming in his allocution made a forceful appeal to the members to maintain an undivided national organization, to remain loyal to the cause and set forth the objectives to be attained, among which are: that of obtaining justice under the reclassification bill, that of improved conditions of retirement, and appropriate compensation for overtime. Vice-president-at-large Townsend deplored the fact that too much attention had been given to the material interests and too little to professional efficiency, and that the "drive" for increased membership was none too favorable in view of the great need of a 100 per cent membership.

Vice-president Swain elaborated on the questions of reclassification, the pitiful distress of the unfortunate victims of protracted illness, vacations for field employees and conditions of retirement for age or disability, giving the impression without committing himself that our government has not decorated itself with the badge of magnanimity, insofar as veterinary inspectors are concerned.

Secretary Day gave an outline of a uniform efficiency rating and promotion project covering a wide range of attributes and qualifications by which candidates for promotion should be scored. These include loyalty, obedience, initiative, personal habits and disposition, resourcefulness, punctuality, adaptability, scientific attainments, and many others. He recommended that the tests should be made by an appointed board approved by the secretary of agriculture. The report brought out such a divergence of opinions that the appointment of a special committee to study the question further was deemed advisable.

Dr. Fleming was re-elected president, Dr. Day, secretary-treasurer, and J. S. Jenison, National Stock Yards, Illinois, was elected vice-president-at-large to succeed N. L. Townsend, of New York. The secretary-treasurer's address in the future will be 1749 West Pershing Road, Chicago, Illinois.

The Hudson Valley Veterinary Medical Society held its annual meeting at the Phoenix Hose House, Poughkeepsie, N. Y., November 15. The officers are Wm. Henry Kelly, Albany, secretary-treasurer; Chas. A. Roig, Poughkeepsie, president, and Chas. A. Kehr, Hopewell Junction, N. Y., vice-president.

Botna Valley Veterinary Association is the name of a new Iowa society organized at Atlantic City October 23. H. Kirk, of Griswold, was elected president; Dr. Norden, of Avoca, secretary, and J. V. Robinson, treasurer. It is proposed to hold a meeting every three months, the first one December 4.

THE NEW YORK CITY VETERINARY ASSOCIATION OCTOBER 4, 1922
EUROPEAN OBSERVATIONS

DR. EICHHORN spoke of the situation as it affects the veterinary practitioner, schools, etc. The veterinary profession seems to be doing well in the European countries he visited. But the schools are seriously injured—short of funds and short of equipment. It is practically out of the question for them to carry on any scientific investigations. However, owing to the prevalence of foot and mouth disease following the war, there has been considerable work done on this particular disease. They have isolated what appears to be the active agent. At least they have perfected a media on which they get a definite growth. It looks as though the determining factor of the plague is in sight. Another thing they have learned is that they can use guinea pigs as diagnostic animals. In the past in determining whether an infection was foot and mouth disease or not, we always thought we had to use calves, but it has now been determined that, by scarifying the feet of the guinea pig and rubbing in the virus, vesicles will develop in twenty-four hours.

Contagious Pleuro-Pneumonia

Contagious pleuro-pneumonia is more extensive in Europe at the present time than it

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has been perhaps in twenty years. They have also improved methods of diagnosing in the study of this disease, now using the complement fixation test. This has been made possible by an increased cultivation of the virus. A method of diagnosing, similar to tuberculin testing has also been perfected, getting a temperature reaction as early as the second hour, which is a tremendous advantage in this insidious and ofttimes chronic disease.

Abortion Disease

Contagious abortion is widespread in Europe. The method of control is now universally the same—the injection of the live culture, but by veterinarians only. Laymen are not allowed to use biologics in Europe.

Horses Scarce

As to live stock in general, the number is greatly reduced and very inferior in quality. In many places draft horses are replaced by oxen, doing draying in large places. In Vienna where beautiful horses were the rule, the undernourished, poor specimen now prevails. In Hungary and Czechoslovakia, the livestock is of good quality. This is also true of France. Meat and meat products are scarce throughout Europe. Consequently, meat inspection is very lax. In Germany thousands of dogs are being slaughtered for consumption. There is practically nothing being done in the control of tuberculosis at present.

Agriculture in Distress

Agriculturally, conditions are bad. The large estates have been divided into small parcels for the peasants in certain countries like Roumania, Jugo-Slavia and Russia. This has the disadvantage of lowering agricultural production as the peasant is often wanting in knowledge of agriculture and surely lacking in equipment for large production. Likewise, the lack of capital and utensils prevents the small, poverty-stricken peasant from working his land to its full capacity and its greatest production. This should react in America where agriculture is in the ascendancy, which in turn will mean enhancement of our animal industry. All of this points to the necessity at once of educating veterinarians in America to give proper care to veterinary problems. In Europe there is a custom in vogue at this time to give considerable post-graduate work to the veterinarians, concentrating for one or two weeks on one subject rather than a few days on several subjects. This seems to be a wise innovation.

Dourine

Dourine has become very prevalent in the eastern European countries where it was prac-

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tically unknown before the war. This, of course, means that breeding must be interfered with and perhaps the shortest route will be to castrate most of the male animals. Hog cholera is not handled nearly as well as in this country. They have not adopted the simultaneous treatment as we have and the consequence is that the losses are enormous.

Cassius Way Reports A. V. M. A. Meeting

Dr. Cassius Way was asked by the President to give a report relative to the recent meeting in St. Louis. The Doctor reported that the meeting as a whole was a very good one; attendance possibly not quite so large as at some previous meetings, but that it was regarded as a regular practitioner's meeting. The clinic and clinical material were unusually good.

Dr. Way then read a report of the executive committee which was presented to the association relative to the changing of the management of the Journal by electing Dr. Preston Hoskins secretary and editor.

Dr. I. E. Altman reported a dog having a fistula in the scrotum through which urine passed. On autopsy it was found that the fistula had been occasioned by sharp calculus.

The case was discussed by Dr. Harry Miller, who also reported a fistula of the umbilicus of a pup which on operating it was found to originate in the bile duct. The duct was tied off and recovery promptly followed.

Dr. Ackerman reported a dog that bled occasionally from the prepuce. Upon examination a rubber band was found just back of the glans penis. The question of interest is why the band was put there.—J. F. DeVine.

Dr. and Mrs. G. W. Tyson announce the birth of a daughter, July 16, 1922. The young lady's name is June Mae.

Dr. S. E. Hershey, Charleston, West Virginia, who conducts one of the most orderly veterinary hospitals in this country, bears the distinction of being the only alumnus of his alma mater, having graduated in the veterinary department of Kingston (Ontario) university which suspended operations after the first senior completed the curriculum. He is a member of the American, the Missouri Valley and West Virginia veterinary medical associations and served the latter for eight years as secretary and eight as president.

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A MESSAGE FROM THE MISSOURI VALLEY VETERINARY ASSOCIATION

President Treman and Secretary Bourne have distributed a circular letter to the members of this association that contains so much sound advice to all veterinarians concerned in association welfare that we take pleasure in reproducing it verbatim for the good of the cause everywhere, and especially to invoke a more active support of association officers from the members.

At our recent meeting in Omaha, we discussed freely some things "for the good of the order". Members were frank to say what they thought regarding our needs and some things that we don't need, with the result, that, those in attendance at least, felt that we were going to buckle up and do better individually and collectively.

Controversies of Commercial Origin Deplored

Because some very disagreeable controversies have found their way into our meetings in the past a few members have dropped out and others have become dissatisfied. The question of disbanding was even given serious consideration, but when it came to a vote the majority showed that they value our semi-annual gatherings too highly to permit commercialism and factionalism to ruin such a splendid educational and scientific organization as ours. While we regret these disagreeable incidents, we feel that it will result in better, bigger and more practical meetings than we have had for several years, besides making for better co-operation and more concerted action upon questions of such vital importance to the veterinarians of the Missouri valley, during this trying period through which we are passing; when of all times we should hang together or as Patrick Henry said "We may hang separately".

The spirit of "Let George Do It" will not keep an association like ours forging ahead doing the good work it ought to be doing. The new officers are determined to keep commercialism and personalities entirely off the floor in future meetings and with the co-operation and participation of the practitioners, the programs will be not only of intense interest but practical in every sense of the word.

Help the Officers

Well then, the case is something like this: (1) When you are asked to help with the program, don't ignore the invitation, but come

back with an acknowledgment at least. You do things differently than the other fellow, maybe better, maybe not, but that doesn't matter. Tell it to the bunch, and start a little argument. Then everyone gets the benefit of the whole mass of ideas, yourself included.

Don't Knock, Pay Your Dues and Attend the Meetings

(2) Don't knock. Someone says, "The Devil lived in Heaven until he started knocking." If you have a petty grievance, leave it at home, preferably at the city dump or weighted down with six feet of good firm real estate.

(3) Keep your dues paid up. We can do a much better job if everyone pays his dues promptly. Perhaps we can even resume publishing our proceedings. At least we can get good outside talent on our programs.

(4) When you come to meetings, come. It has been an almost impossible task to induce the crowd to get into the hall to hear the programs. The new president says he is going to start on time and when he is through with a program as scheduled, quit and let the members visit. Let's help him out. We have adopted a resolution asking exhibitors to close their exhibits during the hours scheduled for the sessions and we believe they will willingly do so.

(5) Write to the secretary and tell him what you would like to have on the program. He will appreciate your help.

(6) We can use good live members no matter in what line of veterinary activity they may be engaged. We don't operate for any one class but for the good of all, so let's don't let any one class do it all and get all the benefits.

H. B. Treman, President.

R. F. Bourne, Secretary.

A diphtheretic enteritis that seems to be due to an acid fast bacillus is raging among the cats of Toledo, Ohio, according to a report from Dr. C. W. Sass, a practitioner of that city.

The Vermont Veterinary Medical Association will hold its winter meeting at St. Johnsbury, January 10 and 11. The officers are P. A. Wakefield, Hardwick, president; K. M. Kennedy, Montpelier, first vice-president; E. L. Miller, Newport, second vice-president; and Geo. Thomas, Wells River, secretary-treasurer.

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Would you be interested in a practical, satisfactory way of handling retained placentae and pneumonias in cattle? If so, write us.

Looking Backward

A Look Into the Past Unfetters the Mind, Gives a Clearer Conception of the Present, and Tends to Strengthen Our Confidence in the Future

According to Genesis the serpent was the ministrant at the Tree in the Garden of Eden.

The early American physicians had their favorite pills and concoctions, the composition of which they invariably kept a profound secret.

Louis Pasteur, to whose work most all modern thought in medical science reverts, was born at Dole (Jura), France, December 27, one hundred years ago.

Pasteur was educated at Jena university and took his medical degree in l'Ecole Normale, Paris. He made his most important discoveries at Strasburg, Alsace, where preparations for the celebration of the centennary of his birth are under way.

While the name of Pasteur is popularly connected with the discovery of the modern treatment of hydrophobia it is the discoveries he made in bacteriology in general that will make his name live in the ages.

By a strange unanimity, the serpent upon a staff was the symbol of the healing art used by ancient people widely separated from one another. It seems to have been used alike for centuries by the Egyptians and the American Indians on two widely separated continents having no known means of inter-communication.

American medicine got a bad start when Dr. Benjamin Rush, a noted American physician and a signer of the Declaration of Independence, said "Conferring exclusive privileges upon bodies of physicians, and forbidding men of equal talents and knowledge from practicing medicine within certain districts of cities and countries, are inquisitions however sanctioned by ancient charters and names serving as Bastiles of our profession." The distinguished individual also said "We have assisted in multiplying diseases and increased their mortality."

Atossa, (650 B. C.) daughter of Cyrus, became the mother of Xerxes after Democedes, a Greek physician, had cured her of cancer of the breast.

The early philosophers made medical lore a part of their learning. Hippocrates was among the first to specialize on the healing art alone and to create a special medical literature.

There is no Father of Medicine recorded in the history of the healing art. Medicine was either created or evolved with man himself. Hippocrates lived but yesterday, and before him stretched the vast ages during which the healing art developed.

While the American school of medicine would hardly admit it, many of the first conceptions of medical knowledge were obtained from the Indians. Through friendly relations with Indian practitioners, the whites learned about the curative properties of many native plants for the first time, and many of these plants are now in the pharmacopeia.

The training of physicians and surgeons in this country during the colonial period and early decades of the Republic consisted of association with existing practitioners, reading of their few books and observing their methods, and as the pioneers pushed westward this custom followed into comparatively recent years.

Rome for many centuries had no physicians, holding learning, philosophy and arts more or less in contempt and subordinate to military training. The Roman patricians despised the physician, abhorring all men who made trade of curing the sick. Emperor Justinian (527-565 A. D.) closed all schools of medicine. In 543 A. D. a plague, the fatality of which has never been surpassed, carried off one-half of the population and left barbarism supreme and universal.

VETERINARY MEDICINE celebrated its 18th anniversary last month. The first issue appeared in November, 1905, under the name of the Iowa-Nebraska Veterinary Bulletin.

A CANINE AND FELINE ALLIANCE

Seven motherless kittens find succor in a willing foster-mother.

Dr. W. S. Wilson, formerly of Franklin, Minn., has moved to Buffalo, Minn., to open an office and establish himself in practice.

Peggy and Priscilla are names of the twin girls that arrived at the home of Dr. J. E. Hodges, of Maiden, N. C., August 24.

Dr. E. L. Krieger of Benton Harbor, Mich., has just returned to his practice after an extended trip covering all important points along the Pacific Coast from Vancouver, B. C., to Tia Juana, Mexico.

H. M. Martin, of the Nebraska Experiment Station, has recently published Circular No. 17, in which he maintains that "if the ascaris problem on our hog farms is to be solved, it is very evident that instead of giving medicine to swine, sanitation must be resorted to."

Dr. L. M. Walker, 39 years old, of Decatur, Neb., died at Omaha after a protracted illness, November 2. He was a graduate of the Kansas City Veterinary College, class of 1911; practiced his profession at Decatur until three years ago when he moved three miles south of that city to engage in farming.

Through the death of his father-in-law, Mr. Gideon Ellyson, Lieut. Col. J. H. Goulds, V. C., U. S. Army, becomes principal owner of the Standard Chemical Company of Des Moines, Iowa. Mr. Ellyson was an influential publicist in both local and national circles and was an enthusiastic worker for veterinary corps legislation.

Is it a Trick to Please One Client?	No, it is just an ordinary accomplishment for you to gain the confidence of and serve one client. (Haver-Glover, or any other concern could serve a few satisfactorily without much effort.)
What is The Secret of "Making Good?"	To "make good" you (or the Haver-Glover Laboratories) must prove by your actions and service that you know how to "deliver the goods." Prove that and your clients will double and treble.
Are You Growing as fast as Your Work?	If you are proving your ability to an increasing number your business is growing, and to keep ahead of your business, you must grow with it. It means you must hold the confidence of every client.
What does Haver-Glover Growth depend upon?	Our growth depends upon the same principles as your growth. By assisting you in keeping ahead of your business and by supplying you products that will make your services preferred, we of the Haver-Glover Laboratories base our hopes on a successful future.

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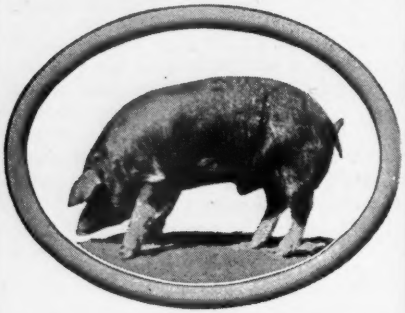

We insure the man who DOES NOT BELIEVE IN VACCINATION and vaccinate his herd if he needs it. We VACCINATE EVERY HERD we insure at the FIRST INDICATION of cholera. Our vaccination policy offers complete protection to your client and to you.

Our commercial hog policy provides all needed veterinary service free to policyholders THROUGH THE LOCAL VETERINARIAN. We deal with graduate veterinarians, only.

Less than 25 per cent of the hogs have ever been vaccinated. **Let us help you educate the other 75 per cent by introducing** your services by means of our insurance.

We have excellent openings for local and district agents where we are not represented. Write for our agency plan and commissions paid.

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TYLER REMINISCES

Sitting in my office today, I fell to thinking about our so-called "higher requirements for matriculation" in the colleges today and judging from my acquaintance with the average high school graduates of today, I am convinced he would have a hard time to make the grade if not protected by his diploma, but was required to submit to such an examination as I took when I entered the Chicago Veterinary College, in the fall of 1889.

I was required to figure interest, percentage and do problems in fractions and decimals. One example I still remember was: multiply 4 6/7 by 5.9. In grammar, the questions covered the defining of nouns, verbs, adverbs, etc., giving the correct use of some of them in sentences. Spelling and penmanship graded from our papers, and there were many questions in geography. But Pa was strong for grammar and mathematics, the latter especially, no doubt on the presumption that we would all become masters of finance from veterinary practice, and we all thought so, too.—J. L. T., Calif.

EQUINE ANTHELMINTIC

℞

Arsenious acid	30 grs.
Iron sulphate, exsic.	
Tartar emetic aa	2 drs.
Powdered fenugreek	1 oz.

Mix, make twelve powders, and give in feed twice a day for a week, then follow with an aloetic purge.—Reeds.

The problem of controlling tuberculosis in fowls is important and should be given the serious consideration of those in charge of animal health.

"When disease is present in a flock probably the most practical suggestion that can be followed by most farmers is to get rid of all birds about May 1. This gets the spring egg crop and at the same time eliminates the rapid losses which come with warm weather."

The foregoing is quoted from an article entitled "A Great Loss from Tuberculosis," that appeared in the October issue (1922) of Successful Farming. Such statements give an erroneous idea of the significance of fowl tuberculosis as it leaves the impression that this disease in fowls is only of economic importance to the producer and that eggs from tubercular fowls are good enough for the consuming public.

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TREATMENT OF STOMACH WORMS IN SHEEP

The copper sulphate treatment of stomach worms in sheep is improved by the addition of tobacco, according to experiments made at the Oklahoma experiment station. The treatment, when tobacco is added, removes from 90% to 100% of the worms, while copper sulphate alone removes only 75% to 95%.

The treatment is given as follows: Dissolve a quarter of a pound of copper sulphate and an equal amount of finely ground tobacco, each in a half gallon of boiling water in separate vessels. Cover and let the solutions stand over night. Mix the two solutions in a non-metallic vessel and add two gallons of cold water. The dose is one and three quarters ounces for lambs under one year old and three and a half ounces for adults.

DISTEMPER—TETANUS IN A DOG

1. I would like some information about a Chinese puppy that was sick and emaciated on arrival here after shipment. The appetite was poor, some sneezing, eyes were discharging, and the dog would shake his head considerably. I diagnosed the case as distemper and administered cod-liver oil. Two days later the bowels were loose and the gait staggering as he walked about in the office. The next day he was worse and died. There were eruptions on the skin.

2. A hound, four months old. The owner thought the dog had a bone in its throat. The dog would walk with the head extended and the legs stiff and would then fall over with the body rigid. The temperature was normal and the pulse 130. Disphagia seemed to be complete. The body was so rigid and the head turned back giving one the impression of a frozen carcass. The eyes were dull but the membrana nictitans did not show and the tail was not rigid, as in a case of tetanus. What is the diagnosis?

Reply: 1. There is no doubt that the Chinese puppy was a victim of a virulent attack of distemper. The case was too advanced at the time of arrival for successful treatment.

2. Tetanus in dogs is more likely to be atypical as regards regional contractures, than in the horse. There may be trismus without a concomitant body rigidity or the reverse may sometimes feature the attack, and the characteristic flipping of the nictitans so conspicuous in horses is not constant. It may be held permanently over the corneal surface or it may not "show" at all. In short, dog tetanus, while most frequently orthrotonic may sometimes localize and

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The standard remedy for bronchial affections for the last nine years. Enthusiastically endorsed by thousands of veterinarians who use it constantly because they get **results** and find it very economical and satisfactory. **Guaialyptol,** in aqueous emulsions (colored as required), is very profitable to dispense. **Guaialyptol** is composed of Guaiacol, Eucalyptus and Camphor Oils, Cresylic Acid and Saponaceous Oils. It is indicated in Bronchitis, Laryngitis, Pharyngitis Oedema Glottidis, Influenza. Distemper, Septic conditions of the alimentary tract, Gastric or Intestinal Flatulence, Pneumonia, etc.

Prices: 1 gal., $5.00.

If there be no bronchial involvement **Eucamphine** is more economical to use.

Prices on Eucamphine:

1 gal., $3.50; 2 gal., $6.00 Prepaid; 5 gal., $15.00 Prepaid

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persist in any region. A case that recently occurred in our practice exhibited only trismus—a trismus so rigid that the jaws could not be pried open even a fraction of a millimeter, while the rest of the body remained in a normal state of relaxation.

COLIC CAPSULE

℞

Ammonia carbonate ..... 4 drs.
Powdered nux vomica
Powdered capsicum
Powdered camphor aa..... 1 dr.

Mix and put into No. 7 capsule.—Reeds.

Drs. F. L. Stein and L. J. Desson are building a veterinary hospital at Rochester, N. Y., to cost $30,000. The hospital is a two-story building 45x120 and of fire-proof construction. It has a plate glass front, steel ceilings and tile roof and is divided into waiting room, consultation room, operating room, pharmacy and an X-ray laboratory and with six wards and several runs, together with a special cat department.

Dr. R. A. Branson (Manhattan '11) died at Topeka, Kansas, August 28 from appendicitis. He was a practitioner at Cotton Falls, Kan., and is survived by his widow, a son aged 5, a daughter aged 11, and an infant daughter born a few days before his death. He served as an officer of the veterinary corps, A. E. F., for 18 months.

Dr. A. Kederabek of Fort Dodge, Iowa, is taking the Pasteur treatment for rabies, having had the misfortune of being bitten in the hand by a stray dog. The dog died the following day and the clinical diagnosis was confirmed by a laboratory examination.

FOR BOVINE INDIGESTION

℞

Powdered nux vomica
Powdered ginger aa..... 1 part
Powdered fenugreek ..... 2 parts
Sodium thiosulphate ..... 4 parts

Dose:—One ounce three or four times a day. —Reeds.

Veterinary Welfare*

By N. S. Mayo, Chicago, Ill.

THE welfare and progress of our profession depends ultimately upon the ability and efforts of each individual member. There is no royal road down which progress marches joyously dragging unwilling and lagging members along. It is true that a few hope to make some progress through the efforts of others but their advance is not great. Each individual must make some progress or go backward. There is no standing still.

Responsibility Individual

The welfare and progress of our profession must begin at home. That is with the individual, and every member of our profession should realize the responsibility that is his. He is the representative of our profession in his community and that community will measure the veterinary profession largely by the standard set by the local veterinarian, professionally, ethically, socially and by the service he renders to that community.

Much Depends on Service and Technical Training

Veterinary welfare also depends upon the opportunity for service and the real service that the veterinarian can render to humanity. The pecuniary return is important but there are other things besides money that make for our welfare also.

The first essential to our welfare is the general and technical training of the members of our profession. Upon one's general training, as well as technical, will we be measured, at least in comparison with the so-called learned professions. We know that the standards of training are higher than ever before and that the facilities and equipment are better and much progress is being made in the fundamental training for our profession.

Add to the Fund of Knowledge

Another important factor in the progress of our profession is the increased information available that enables us to better solve the many professional problems that we encounter. Research workers are adding their scientific contributions, that are of great practical value and I cannot omit the splendid work of Dr. Maurice Hall in demonstrating the value of carbon tetrachlorid for the treatment of intestinal round worms in animal and man. Every practitioner can do his part by contributing to association meetings such as this, or sending to the veterinary journals the results of his own research and experience in every day practice. There is room for great improvement here and an opportunity for everyone to contribute to the welfare of the whole.

Co-operate With the Livestock Interests

Another great factor in our professional welfare is the establishment of cordial relations with the farming and livestock industries upon which our profession is dependent. This should be done not only by our individual bearing to others in our daily contact but through various agencies that are working to advance the farming and livestock industries, farm and livestock organizations, county agents, the local press in rural communities, as well as livestock and farm papers of general circulation.

Harmony is absolutely essential to welfare and progress. Just as surely as home life is ruined by quarrels, and controversy, so is professional progress and welfare ruined by strife within our ranks. Nothing in this world is absolutely perfect. If you know of errors that need correcting go at it courteously and fairly, straight to the heart of the matter and every one will appreciate your efforts to make things better in the proper way and you will have the assistance and support of all fair minded men.

Support Associations

Other important factors in our profession's welfare are our professional associations. It is our duty to join such associations and unite our efforts with our professional associates for the advancement of our professional interests in every direction. In union there is strength and by our associations and their work, is our profession judged in the state and nations outside of the community that measures our individual efforts. Every veterinarian should join the local veterinary association, the state association and the national association, for they afford the best opportunities for advancing our interest and promoting our welfare as a whole.

A Prominent New York Veterinarian Performing a Surgical Operation on a Lioness, Under Profound Anesthesia.

Better Times in Sight

Our profession is just emerging, or possibly better said, just beginning to emerge from a serious depression that has affected everyone, not only financially but psychologically. I do not think it has hit us harder than it did the farmer and stockman, but certainly hard enough. Quite a few veterinarians gave up their profession and entered other lines of work; the attendance in the veterinary colleges was greatly reduced, and we all felt blue and "bolsheviki". It was, however, a world wide depression that is gradually disappearing. Such conditions occur at times and there are some of us who recall a more severe period of depression in the early nineties, that still has painful memories. We lived through it and we believe that we profited by the experience.

We believe that times are improving materially and that the outlook for our profession is good. There is no country in the world that is so favorably situated, economically, socially and politically as the United States of America. There is no country in the world where people live as well as we do or have greater opportunities for enjoying the real pleasures of life, so let us be optimists, let us strive to improve ourselves in professional lines by attending association meetings and taking and reading the best veterinary literature available.

Let us be charitable, sympathetic and helpful to others in our profession and outside of it—let us give the very best service possible to our clients—let us do our work to the best of our ability and conduct ourselves as professional gentlemen and the future welfare of our profession will be established beyond question.

*Presented before the annual (1922) meeting of the Missouri Valley Veterinary Association.

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Correspondence solicited from qualified veterinarians.

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- PELVIC INJURY IN A 2:10 PACER

A valuable pacing mare, making the short turn in first lap of a mile race at a 2:10 clip, on a solid track, suddenly quit and had to be practically carried from the track.

Symptoms: Would barely touch toe of right hind to ground. Could be forced to take four or five steps at a time, and would then quit. Rapid breathing, accelerated pulse, great distress, stretched out in stall on left side. The severe pain subsided in about thirty minutes, when mare got on feet without assistance or effort. Marked abduction of limb at each step, with point of toe.

Examination failed to reveal lesions of the limb. Right hip and limb were subjected to hot packs for sixteen hours. An examination at this time revealed no swelling or external lesions, while a rectal examination failed to reveal a fracture. A marked snap or click could be detected on both outward and inward pressure on shaft of ilium about four inches above acetabulum.

Diagnosis: Guarded.

Treatment: Mare was not allowed to move for two weeks. Hot applications to hip for one week. Patient was ideal in every respect. Did not put weight on right hind for over a week, then she began shifting weight on hind limbs. Two weeks after injury a few steps showed a marked loss of control of the principal adductor and abductor femoral muscles. When limb was in natural position under body, limp was very slight. Next step would show a marked adduction or abduction, then limp was more pronounced and vice-versa. Mare refused to pivot on right hind. Any effort to induce pivoting on right hind produced pain.

A marked click or snap, same as previously mentioned, can be heard on both flexion and extension of the right hind limb. Mare will bear body weight on right hind as readily as on left hind. There is a slight atrophy of the gluteal muscles. Mare takes quite a lot of exercise in large double box stall.

The right anterior iliac spine is about one-half inch higher than the left anterior iliac spine, due to an old injury, of which there is no history.

This injury to the right sacro-iliac articulation, gives this mare a slight hitch in right limb, when going the right way of the track, while going the wrong way of the track she shows a perfect gait, due to the slight shortening of the right hind limb.

Purpura Hemorrhagica, Atypical in That the Initial Swelling was a Hard Tumefaction of the Right Shoulder—J. B. Jaffray.

I am of the opinion that this short right hind stride is responsible for the recent injury as right limb would naturally be more susceptible to injury on a sharp turn to the left at full speed.—L. C. H., Ill.

Reply: Unless there is a pronounced sinking of the affected hip by this time it is very likely the trouble is in the sacro-iliac articulation. Snapping or coarse clicking sounds in pelvic injuries always indicate fracture of the pelvis or desmorrhexis of the sacro-iliac joint. The slight atrophy already observed and the abduction movement of the leg points to an injury of this kind.

A horse as valuable as this one should be rested longer to assure recovery. It would be better to give this horse a rest until next spring with no other exercise than the jogging necessary to keep him fit. Feed well and administer some mineral compound like Vitamineral or a similar compound in the feed continually.

Guess Them For a Year's Subscription. They Are Well Known Men. Illinois Veterinarians Excluded.

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FOR SALE—Anti-Fis-Tract is a proven remedy for all fistulous tracts, actinomycosis, chronic abscesses, etc. Full directions. $1.00 per dozen. Charges prepaid. I. G. Wimsett, D.V.M., Wellington, Kans.

FOR SALE—Good practice. Hogs, horses and cattle, Central Illinois. Good oiled roads, every direction. Nearest competitor twelve miles. Price, each $450.00. Address No. 712, care of VETERINARY MEDICINE.

I HAVE A FEW PAIR OF REGISTERED SILver black foxes for sale. This is the center of the black fox industry of the United States. Dr. F. U. Steele, Muskegon, Mich.

FOR SALE—Simplicity Equine Operating Table. Three movement model. Only slightly used. Will sell for $150.00 cash, f. o. b. Central Michigan. Address No. 713, care of VETERINARY MEDICINE.

FOR SALE—Pammel's "Manual of Poisonous Plants." Price $7.50. Address orders to: Prof. L. H. Pammel, Iowa State College, Ames, Iowa.

POSITIONS, LOCATIONS, ETC.

POSITION WANTED—Graduate grade "A" school. Twelve years' experience. City and country practice and B. A. I. Industrious, clean habits, good appearance. Address No. 707, care of VETERINARY MEDICINE.

VETERINARY PRACTICES, POSITIONS, ETC., furnished and handled for sale in 48 states. Physicians, dentists and nurses furnished and located. Drug stores for sale and drug positions in all states. F. V. Kniest, Peters Trust Bldg., Omaha, Neb. (Guaranteed Service.) Established 1904.

POSITION OPEN—For a good, practical veterinarian, at the Hyde Park Dog and Cat Hospital, 1157-9 East Fifty-Fifth Street, Chicago Ill.

WANTED—Will buy hog cholera serum plant. Give full description and price in first letter. Address No. 711, care of VETERINARY MEDICINE.

POSITION WANTED—Graduate veterinarian. Eleven years' practical experience. Inspection, transportation, postmortem, hog cholera, tuberculin testing, general and canine practice. Prefer central west or northwest states. Best references. What have you to offer? Address No. 710, care of VETERINARY MEDICINE.

WANTED—Silver fox. We pay $500.00 each for fine skins. We buy all you supply. Write to us for information as to how to raise the Silver Fox. Duffus Silver Fox Store, 21 West 30th St., New York City.

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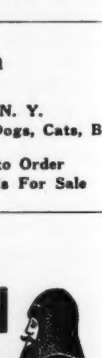

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Mrs. A. Duval, 32 years old, wife of Dr. A. Duval of Rutland, Vt., died October 7th after a brief illness, leaving the doctor as the only survivor.

ADMINISTRATION OF CHENOPODIUM

I have been using oil of chenopodium and oil of turpentine combined with three-fourths of an ounce of castor oil for intestinal parasites of swine, but I find quite frequently that it causes vomiting, and this same effect is produced when it is given in small doses and also in capsules.

Could you advise me as to how I can disguise it and not interfere with its vermifuge effect? I would prefer to give it with the other oils, thrown back on the tongue with syringe, as this seems to be the most satisfactory method of administration.

Any information to help me out will certainly be appreciated.—C. A. B., Ia.

Reply by Dr. Kinsley

The nauseating effects of the oil of chenopodium can probably be avoided by combining the oil with bland oil; such as, linseed or cottonseed oil in the place of castor oil. It might be suggested further that some aromatic oil such as peppermint or terebinthae may be added, thus overcoming the odor and taste of the oil of chenopodium.

Dr. W. A. Pulver, of Ferndale, Cal., has been appointed state hide and brand inspector for southern Humboldt, to suceed Dr. Frank Rolley, of Fortuna.

Dr. Fred Barta, a graduate of the Kansas City Veterinary College some years ago, has located at Denison, Iowa, taking over the practice and hospital formerly conducted by Hal Simpson. Dr. W. J. Musil, Simpson's successor has moved to Logan, Iowa.

Drs. Wm. L. Gates of Clarkesdale, C. G. Stalling of Drew, and O. M. and E. S. Norton of Greenville, Mississippi, are working out a treatment for black tongue of dogs that promises to be successful.

Drs. Birch and Harrison, of Waukon, Iowa, have dissolved partnership. Dr. Harrison takes over the entire practice there and Dr. Birch goes to Worthington, Minn., his former home, where he was offered inducements to return.

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The Texas state association met at Wachahachie, October 26 and 27. The officers are: G. A. Newton, of Bertram, president, and C. H. Williams, of Granger, secretary.

Dr. G. W. Waddell of Marysville, California, died of anthrax contracted while coping with an outbreak of the disease in that region. Dr. Waddell was meat inspector for the city of Marysville. Phillip Walters, a rancher of Sutter county in the same region, who became infected at the time, is reported to be in a serious condition.

Dr. J. C. Dawson, formerly of Vail, Iowa, has accepted a position as veterinarian in charge of the Gail Borden Company at the Pine Ridge Farm near Jackson, Mississippi. Dr. Dawson is a graduate of Ames, enjoyed a large practice at Vail, and was a veterinary officer during the war. He has been active in American Legion circles and was vice-commander of the Vail post.

Dr. C. B. Michels of Evansville, Illinois, has accepted a position with the United States bureau of animal industry with station at National Stock Yards, Illinois.

C. M. Morgan, of Manchester, was elected president of the Eastern Iowa Veterinary Medical Association at the recent meeting of that association at Clinton. F. J. Crowe was elected secretary treasurer, J. H. Odgers of DeWitt, vice-president, and Drs. Potts, Hell and Wolfe members of the executive board.

Geo. P. Statter, of Sioux City, was elected president of the Northwestern Iowa Veterinary Medical Association at the annual meeting in Sioux City in October. P. L. Ellis was re-elected secretary treasurer, J. T. McGilvray of Sioux Falls, S. D., vice-president, and Drs. L. P. Brewster and Will Hawkins were appointed members of the executive board.

Dr. Wm. P. Bossenberger, of Williams, Iowa, who relinquished practice to Dr. L. P. terling two years ago on account of sickness, has resumed work at the old stand, fully recovered in health.

Dr. H. E. Bemis of the veterinary division of the Iowa State college officiated as one of the judges in the endurance ride for saddle horses at Fort Ethan Allen, Vermont, October 16.

Dr. T. P. Haslam has severed his connection with the Globe Laboratories of Fort Worth, Texas. Dr. Haslam will soon complete work for an M. D. degree, and is looking forward to the establishment of laboratories for both human and veterinary biologics.

Dr. J. D. Thrower of the United Serum Company of Kansas City, Kans., was unfortunate in that his house was extensively damaged by fire early in October.

Dr. R. T. Robinson, McMinnville, Tenn., died September 21, at his home in that city from poison self administered. Worry over financial difficulties is given as the cause, in a report reaching this office from one of his colleagues. He leaves a wife and three small children.

Dr. Frank Baker, veterinary meat inspector of Gouverneur, New York, has recently been appointed milk and dairy inspector of that city.

Dr. H. C. Fitch has purchased the practice of Dr. Meier at Missouri Valley, Iowa.

Dr. I. W. Martin has taken over the practice and hospital of Dr. Beverly at Sanborn, Iowa. Dr. Martin is a graduate of Ames.

Dr. D. G. Tepfer (Manhattan '14) has been assigned as government virus and serum inspector at the Fort Dodge plant, Ft. Dodge, Iowa.

Dr. Sivert Eriksen resigned from the University of Illinois to accept the position of chief veterinarian of the Missouri Poultry Farm at Mountain Grove, Mo.

Dr. Walter D. Jensen, brother of Dr. Hans Jensen of the Jensen-Salsbury Laboratories of Kansas City has started the Bio-Chemic Laboratory with offices in Taylor, Nebraska. It advertises serums, vaccines, bacterins and pharmaceutical specialties.

Doctor Jensen was a veterinary officer with the rank of Captain during the war, serving as commanding officer of Army Mobile Hospital No. 1, a unit that operated at Chateau Thierry, St. Miheil and the Argonne, under Maj. M. E. Knowles, commanding the evacuation stations of the 1st Army. These organizations evacuated 23,000 wounded and disabled horses from the battle fields from September 25 to November 11, and conveyed them safely to advanced and base hospitals.

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SOUTH ST. JOSEPH, MO.

Dr. Frank Baker, veterinary meat inspector of Gouverneur, New York, has recently been appointed milk and dairy inspector of that city.

The French veterinary colleges have not granted a degree, but permission has recently been asked of the French government to confer the degree of veterinary doctor.

Dr. S. L. Stewart, of Olathe, Kansas, reports poultry practice on the increase in his territory. The doctor says that flocks of 1,000 birds or more are the ordinary. Some chickens!

Dr. M. S. Campbell, of Brookfield, Missouri, has recently been having some experience with equine pernicious anemia. The disease is apparently confined to one farm.

Dr. W. B. Welch, of Marshall, Mo., has established a temporary office at Hollister, in the Ozarks, where he has been doing immunization of stocker pigs.

Dr. R. T. Robinson, McMinnville, Tenn., died September 21, at his home in that city from poison self-administered. Worry over financial difficulties is given as the cause, in a report reaching this office from one of his colleagues. He leaves a wife and three small children.

Dr. L. J. McDevitt, a graduate of the McKillip Veterinary College, has moved from Owatonna to Nicollet, Minnesota. He practiced at the former place twelve years and is a veterinari[an] of wide experience.

The dipping of 12,000 cattle to eradicate scabies in Apache county has been completed, according to a report from State Veterinarian Hight, of Arizona.

Dr. A. H. Schmidt, formerly of Little Falls, has located at Mahnomen, Minn. Schmidt was an officer of the veterinary corps, A. E. F.

Dr. C. H. Johnson of Wahpeton, N. D., sustained serious injuries when a car he was driving overturned into a ditch, pinning him beneath for four hours before he was found. Although unconscious and thought to have been fatally injured, he was pronounced out of danger in a few days, at the Fargo hospital, where he was rushed by occupants of a passing automobile.

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Second Hand Books

(From the private library of a retired practitioner)

Pathology and Therapeutics of the Diseases of Domestic Animals, by Hutyra & Marek, Vols. 1 & 2.....2 sets, each	$ 5.00
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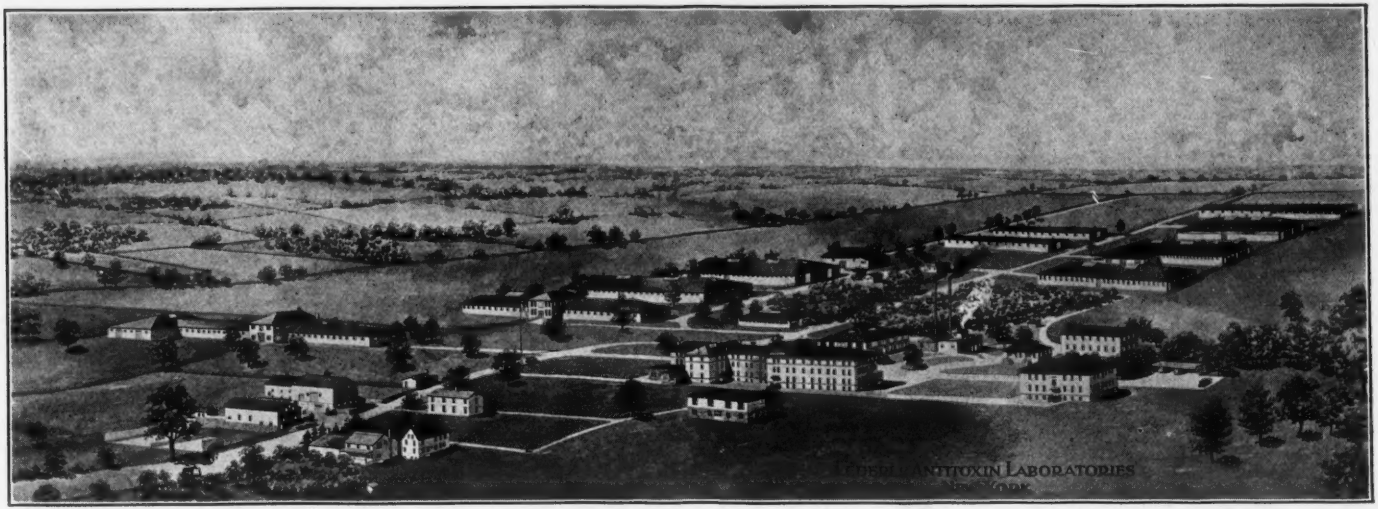

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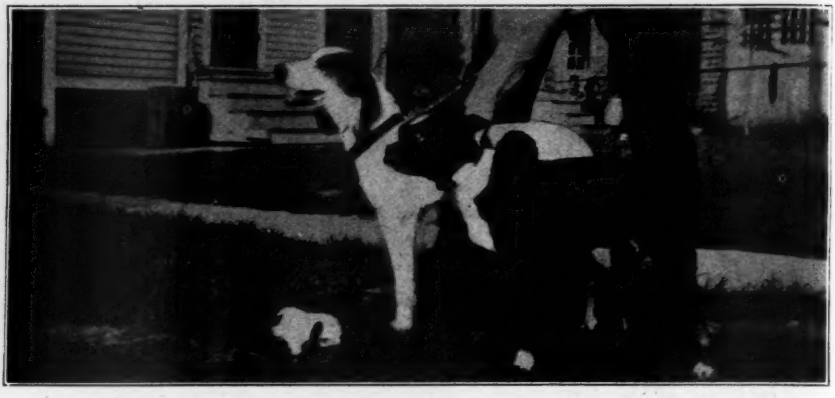

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ASSOCIATION MEETINGS

National Associations

ASSOCIATION	PLACE	DATE	SECRETARY
American Vet. Med. Assn.	Montreal, Que.	1923	H. Preston Hoskins, Box 471, Detroit
Missouri Valley Vet. Assn.	St. Joseph, Mo.	February 13-14-15, 1923	R. F. Bourne, Ft. Collins, Colo.
Natl. Assn. of B. A. I.			L. E. Day, 1749 W. Persh. Rd., Chi.
Southeastern States V. M. A.	Chattanooga, Tenn.	3rd Mon. and Tues., Nov.	J. I. Handley, Atlanta, Ga.

State Associations

Alabama	Auburn		C. A. Cary, Auburn.
Arkansas	Little Rock		Joe H. Bux, Little Rock
California	San Francisco	June 4, 1923	J. B. Bushong, Los Angeles
Colorado	Fort Collins		I. E. Newsom, Fort Collins
Connecticut	Hartford		Geo. E. Corwin
Illinois	Chicago	Dec. 5-6-7, 1922	L. A. Merillat, Chicago
Iowa	Des Moines	Jan. 16-17-18, 1923	H. D. Bergman, Ames
Kentucky	Owensboro		Chas. W. Fisher, Danville
Massachusetts	Boston	Monthly	H. W. Pierce, West Medford
Michigan	East Lansing		R. A. Runnels. East Lansing
Minnesota	Minneapolis	Jan. 10-11, 1923	C. P. Fitch, U. of M., St. Paul
Mississippi	Clarksdale	Jan. 8-9, 1923	Hugh L. Fry, Jackson
Montana	Helena		H. Marsh, Helena
Nebraska	Lincoln	Dec. 12-13, 1922	C. J. Norden, Lincoln
Nevada	Reno		Stephen Lockett, Reno
New Hampshire	Concord	Feb., 1923	R. W. Smith, Concord
New Jersey		Jan. 11, 1923	P. B. Silvester, Princeton
New York	Syracuse		C. E. Hayden, Ithaca
North Carolina	Asheville		J. P. Spoon, Burlington
North Dakota	Fargo		R. S. Amadon, Agri. Coll.
South Carolina	Columbia		M. R. Blackstock, Spartansburg
South Dakota	Sioux Falls		W. J. Joseph, Iroquois
Texas			C. H. Williams, Granger
Utah	Salt Lake City	October, each year	E. A. Bundy, Ogden
Vermont	St. Johnsbury	Jan. 10-11, 1923	George Thomas, Bradford
Virginia	Richmond	Jan. 11-12, 1923	Wm. Chrisman, Blacksburg
Wisconsin	Marinette		O. H. Eliason, Madison

Local Associations

Botna Valley Vet. Assn.	Atlantic City, Ia.	Quarterly	Dr. Nordan, Avoca, Ia.
Chicago Vet. Soc.	Chicago	2nd Tuesday of each month	J. B. Joffray, Chicago
Hudson Val. Vet. Med. Soc.			W. H. Kelly, Albany, N. Y.
No. Central Ia. Vet. Assn.			H. J. Shore, Ft. Dodge, Ia.
Northern Tier Vet. Club.	Williamsport, Pa.		E. B. Mayer, Canton, Pa.
Philadelphia Vet. Club.	Philadelphia	4th Tuesday of month	C. S. Rockwell, 5128 Chestnut, Phila.
San Joaquin Valley V. M. A.	Davis, Calif.	1st Wednesday of month	A. R. Anderson, Jr., Hanford, Cal.
Southern Cal. V. M. A.	Los Angeles	3rd Wednesday of month	J. P. Bushong, Los Angeles.
Southeastern Mich. V. M. A.	Detroit, Mich.	Jan., Apr., Jul., Oct.	H. P. Hoskins, Box 471, Detroit
V. M. Assn. of N. Y. City.	338 E. 26th St.	1st Wednesday of month	J. E. Crawford, Far Rockaway
Wash. State Col. V. M. A.	Wash. State Coll.	2nd & 4th Tues. of month	S. Worley, College Sta.
Western Pa. Vet. Club.	Pittsburgh	3rd Tuesday of month	Fred Weitzel, Pittsburgh
York Co. V. M. Soc.	York, Pa.	1st Tuesday March, June	E. S. Bausticker, York, Pa.

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